ACCOUNTING EVERY BUSINESS MAN SHOULD KNOW

E. E. GARRISON

ACCOUNTING EVERY BUSINESS MAN SHOULD KNOW

Accounting Every Business Man Should Know

By

ELISHA ELY GARRISON

New York
Doubleday, Page & Company
1909

H

PUBLISHED, OCTOBER, 1909

TO

THE 354 CLUB

CONTENTS

FOREWORD

These ideas are the accumulation of twenty years' close contact with the subject, and application of its principles to a great diversity of operations. Manufacture in various lines, Banking, the Football Association of Yale University, Transportation of live stock from Texas and Mexico to Cuba, the largest Wholesale Hardware House in this country, Mining in Arizona, the Retail Business in New York City, and Brokerage have all helped.

The purpose is to explain away the obscurity which frequently hides the real values and purposes of accounting.

Frequent reiteration is unavoidable because of the interdependence of all parts, and the bearing of vital principles upon so many different features.

Great length and much detail have been avoided; but the average mind, with no previous knowledge of the science of accounting, should get, from a careful reading, a clear conception of all the fundamental principles. E. E. G.

ACCOUNTING EVERY BUSINESS MAN SHOULD KNOW

Accounting Every Business Man Should Know

CHAPTER I

ORIGIN AND FOUNDATION IDEAS

ACCOUNTING is the science of so analysing and recording all incidents and transactions of a business, estate, or organisation, that results may be shown, and tendencies indicated.

The primary operations of accounting consist of the contemporaneous accumulation of all necessary data, classified for constant reference, and in such form that clear, brief, and accurate statements may be made therefrom, at stated periods (with the help of necessary revaluations, or inventories), for the purpose of ascertaining past results and determining future policy.

The ultimate operation of accounting is the creation of statements of results, to-

gether with the derivation of correct deductions therefrom.*

Past events, present conditions and tendencies, can be judged correctly only through an intelligent understanding of the information furnished by a suitable accounting organisation; hence the importance of a knowledge of the subject to all in positions of responsibility. The usual difficulty in the way of mastering its intricacies lies in the fact that so many business men fail to discover its practical value until too late to serve an apprenticeship as bookkeeper, and no other way seems open.

If, however, we carefully consider the stages by which the present science of accounting has developed from the first primitive business records, much of the mystery and seeming obscurity disappear. We need not go back to the use of tokens, or even of hieroglyphics, though the principles are the same.

The first step toward modern accounting was the use of an ordinary blankbook in

* The work will prove more valuable to those who memorise thoroughly the foregoing three paragraphs, studying carefully the bearing of nearly every word therein.

which were recorded certain events for the sake of refreshing the memory. Probably the class of transactions appearing most frequently consisted of sales on credit. This was particularly important in early days where money was slow in circulating, and payments were frequently made in commodities at some later date. But even after a circulating medium became general and plentiful, and settlements began to be made at shorter intervals, a written record of credit sales was indispensable to the merchant who was not furnished with an infallible memory. When his customers called to adjust their accounts, he went through his book with them, back to the date of the last settlement, and totalled up the account.

This process became burdensome and interfered with other duties, when a particularly long account, or a considerable number of accounts, had to be made up during busy hours. This led to the idea of procuring another book into which were copied, at night, from the diary or daybook, those accounts which were most active; each such

account being given a separate page in this new book. This was the origin of posting, and the second book was the ledger. Meanwhile promiscuous transactions and sales to infrequent purchasers were recorded as before, but not copied or posted. A part, only, of the operations of a single class, appeared in the ledger.

Next it became desirable for similar reasons to record purchases for credit, first in the day book, to avoid disputes, and then to copy certain purchase accounts, in like manner, into the second book or ledger, partly because, in some instances, of their frequency, and in others, because of the fact that certain purchases were made from people or concerns who already had sales accounts in the ledger, and who naturally expected to have their credits appear over against their debits.

At this point it was necessary to decide between debit and credit, as to which should have the right and which the left side of the page. From all time left and anti- have been synonymous, hence debits to an account, or entries against it, appear on the

left side. The reasoning was from the standpoint of the account, not of the business; hence the fact that things owned, or assets, are shown on the left in a balance sheet, while things owed, or liabilities, appear on the right. The balance sheet is a list of account balances, which balances are made up from original entries made from the standpoint of the account—the outsider—not from the standpoint of the business.

A small business on a cash basis needs no accounts or balance sheet, because all the goods are in sight on the shelves, and the owner learns to tell, almost at a glance, the value of his stock, from time to time: all his money is in the drawer and can be counted. There is nothing else to consider. But a larger business, even though it continue on a cash basis, becomes more of a problem, because those goods in sight are more spread out, and other goods are not yet unpacked, are in storage, or in transit. They may be overlooked in the most careful survey. When to these difficulties we add the fact that the cash drawer has ceased to represent all other assets, the problem be-

comes more and more complicated. The moment that sales or purchases for credit begin, this condition arises. The only evidence that the credit—the good name—of customers has come in in exchange for goods, may be an entry in one or both of the books above mentioned. The same is true of that portion of our credit or good name which we have hypothecated in purchasing on credit. Nevertheless, in estimating our condition it would be inaccurate to lose sight of goods sold for credit and at the same time to ignore the value of that credit, nor would it be fair to include goods bought and not paid for, unless we offset their value by the amount of our own credit pledged.

To return to the steps in the development of an accounting system complete enough to take all these matters into consideration: Probably after the adoption of the second book, which in some way came to be called a ledger, the next difficulty arose in connection with the cash drawer. The business has grown to much larger proportions, a partner has come in and clerks have been

employed. Several people now have access to the cash drawer, and a suspicion arises that it is not treated with due respect. As a means of settling controversy and, at the same time, of rendering pilfering more difficult, a third book is laid on the counter just over the cash drawer, and strict orders given that a record shall be made of every cent taken in or paid out. Following the analogy of the form taken by those ledger accounts which record the receipts of other people's credit, and the extensions of our own, it seems perfectly natural to enter the receipts of cash on the left side of the book and the payments on the right. The next, and most inevitable step is to copy from this book into the ledger those payments and receipts which affect accounts already in the ledger—a further extension of the principle of posting from a book of original entry.

This record of cash from day to day becomes very interesting, because, aside from the meaning of each individual entry, the mere increase or decrease in total volume of cash transactions begins to take a prominent place as a rough index of conditions, and

the daily balance is a feature of especial interest in view of the further extension of credit transactions, because of the fact that sudden and unexpected demands are more frequent.

Furthermore the situation has taken on new complications. It was always desirable to know, at least once in a while, whether the business had added anything to its possessions, or the contrary. Formerly, as we have seen, this was an easier question to determine, nor was the absolute accuracy of the answer vitally essential. Now, with the ever-increasing difficulties in the way of an exact and timely solution of the problem, has come a pressing and necessitous cause for exactitude. It is the new partner, who has been promised a certain per centum of the net profit. The net profit must be known.

Probably many weary hours of fruitless thinking passed before it occurred to the senior partner that, if he could get everything into the ledger that represented things owned or owed, with the exception of goods on the shelves (which could be counted and valued) he could get the answer. The next

step was to open a cash account in the ledger into which he copied or posted, on the proper side of the page in each case, the amounts of cash received and paid out each day. Then from the first book, or daybook, he copied into the ledger even the smallest account receivable or payable. Then he madê a list of all of the accounts in the ledger, counted up or inventoried the merchandise, and added together the values of everything the business owned, including those portions of other people's credit or good name which had been pledged to it, and from this total he subtracted those accounts which represented that portion of the concern's credit which had been hypothecated for goods purchased. The balance thus arrived at showed the net value in the business. By making a memorandum of this net value somewhere where it would not be lost during the year, and then comparing it with a similar balance at the end of the year the net improvement or impairment was unmistakably shown. We shall see how the modern balance sheet exactly parallels this simple process.

We have now evolved from a scratch book a complete single-entry system of accounting, and within the lifetime of the present generation in this country this system was in common use. Even to-day one occasionally hears of single-entry bookkeeping. The reform, like all substantial reforms, came through the very heinousness of the evils which called for reformation. It is, with the best of intentions, very easy to make mistakes in making entries, whether in the first book at the time the transaction occurs, or later in the second book or ledger, when copying or posting by the weak flame of a tallow dip, after the closing of the store for the night, as used to be the custom. But with the introduction of sin and partnership, occasional instances arose where good intentions were not to be depended upon. Perhaps the senior partner kept the books, and, in order to remove the temptation to extravagant living from the path of the younger man, minimised the showing by increasing the apparent volume of payables, or decreasing the receivables. In many ways such a system was very susceptible of

manipulation, and its inaccuracies very difficult to detect. Contemporaneously with the discovery of these facts there arose a desire for further light upon the operations of the business. Perhaps a contract was made for the purchase or sale of certain goods, providing for a rebate if transactions should reach a certain limit within a given period. The accumulated task of going through the first book to find all these items suggested the desirability of setting aside a page in the second book or ledger on which to copy every night the sales for the day, of that particular article.

From this proceeding it soon became apparent that part of the entries were going into the ledger in two places—first on the debit side of a customer's credit record account, and second on the right side or credit side of a special sales record account. At the same time there arose a desire for more information in condensed form regarding amounts of cash or credit which were being expended for the operating expense of running the business. Each consideration, from its own standpoint, was

urging on to the inevitable solution, namely, post or copy into the second book each transaction on the debit side of one account and then on the credit side of another.

This necessitates greater accuracy because it is at once obvious that if each transaction appear on opposite sides of two accounts, the total of all the debit entries for a period will equal the total of all the credit entries—likewise, taking each page or account by itself, arriving at the amount by which the left exceeds the right, or *vice versa,* and then listing all of these balances on a sheet of paper, these balances will balance each other, in total. This is a trial balance and is made merely, in the first instance, to determine whether or not the posting has been correctly done. This is double-entry bookkeeping and it has many advantages over single entry aside from those already mentioned, and aside from the fact that the results of modern accounting would be impossible in any other way.

Up to this point it was almost unavoidable that the owner should keep his own

records. At every turn his judgment was necessary to determine what should be posted into the ledger and how it should be done. This condition, probably more than anything else, accounts for the proverbial omniscience of the old-fashioned business man, and at the same time, the exactions of so much confinement to detail explain in large measure his absence of leisure to think out plans for extending his business, creating new business, and absorbing the business of his less astute neighbours.

The development of higher accounting, together with the safeguards thrown around it, has enabled the head to place the burden of this detail upon other shoulders. This has followed closely the concentration and organisation which have occurred in recent years, and may, perhaps, be one of the large factors in that development. On the other hand, it has led to a condition which the old-fashioned business man would have decried, namely, the elevation to positions of importance of many men who have no exact knowledge of those scientific or mathemati-

cal business principles and methods which are, and always will be, as inseparable from a knowledge of accounting science as are the principles of higher mathematics from those of algebra or geometry.

CHAPTER II

THE TRANSITION TO MODERN METHODS

PROBABLY the first attempt to make a balancing list of account balances, or trial balance from the now complete double-entry ledger, discovered some errors in the work of the period. If the period was a long one and the accounts and transactions considerable in number, the task of finding and correcting these errors was a heavy one. This experience led to the custom of monthly trial balances purely for the purpose of checking up the correctness of the posting more frequently. These monthly trial balances, however, soon became instruments of enlightenment to the thoughtful manager, in many ways, some of which we shall consider in the proper place. At present our concern is with the mechanical side.

Most of these errors—and one cent in a

single case will throw a double-entry ledger out of balance—arose in the copying from the book of original entry into the ledger. For example, a charge to a customer for the sale of goods was entered correctly on the debit side of his account, but was not entered on the credit side of the balancing account, which we will call merchandise sales account. Or it may have been entered incorrectly, or even on the wrong side. This error was found not to be altogether inexcusable, perhaps, because of the great pressure of work on the man who had charge of the posting. Furthermore the entry in the daybook may have been made hastily, during rush of business. At any rate, whatever the cause, the idea occurred to some one of using an intermediate book into which each entry should be carefully copied, in correct form for posting to the ledger, thus obviating the necessity of analysing each transaction simultaneously with carrying its two sides to the two or more ledger accounts concerned.

It frequently requires careful thought to decide, even when one knows, as from the

daybook's story, just what the transaction was, what accounts are to be debited and credited respectively. Particularly is this the case in complicated entries, as where a customer pays the amount of his account less an allowance for breakage or for discount for unexpected promptness. It was found that the mental strain of deciding such matters, and of carrying the form of the entry mentally until it should have been correctly posted, was too great for the average mind to sustain without making mistakes.

This intermediate book was called a journal, for want of a better name, and its uses were various. In some instances it was the channel through which every transaction passed, in order to become properly formulated for copying into the ledger. In other cases the cash was never entered in the journal, while in other cases it became the book of original entry for everything, or for everything but cash. In this case the clerks were either expected to be able to journalise their transactions properly, or had to report them to an office man who

made the actual entry. The daybook, of course, disappeared, or rather was merged with the journal. The usual form of entry was

John Jones, Dr. $7.50
  To Mdse., Cr. 7.50

Obviously it was easier to copy this correctly into the proper ledger accounts than to make the correct posting from a rough memorandum to the effect that John Jones bought several small items, all of which are written out in detail, but in no particular form.

The very ease with which the work of posting could now be done, and the certainty of detection of errors, led to a blessed release from night work and much detail, for the more responsible members of the establishment. Several daybooks could be used for making the first record. Some of these could be in use in the store while others were used by the bookkeepers in the work of writing up the journal.

But even this process was soon found to be unduly laborious. It involved three entries of each transaction, one in the day-

book, a second in the journal, and a third in the ledger. It also involved an entry for nearly every transaction to certain few accounts, as merchandise sales and purchases. A plan was devised to dispense with a large portion of this unnecessary work, and this was the step that led to many of the highest developments of the art of bookkeeping, and made possible much of the progress that has been made in the science of accounting.

From the standpoint of its effect upon the mechanical work to be done, we speak of it as affecting bookkeeping art. For example, it was the beginning of arrangement of books of original entry in such form that those accounts requiring most frequent postings need be posted but once for a period, in some cases a day, in others a week or a month, or even a year. It is from the standpoint of the effect upon the character of the result obtainable, and upon the vital principles governing the art, that we speak of the effect upon the science of accounting.

The step in question was the invention of a journal which had several debit and several

credit columns, instead of one only of each. Formerly each entry required two postings. In the new book one of the credit columns was used as formerly for sundry matters, but where an entry included a credit to merchandise sales, for example, the credit side of that entry was not placed in the sundry column, but was carried into one of the especial credit columns which was headed merchandise sales. Cash also had its column, and any other accounts which appeared with great frequency, either on the debit side or on the credit side. At the end of the period the footing of this column was carried to the appropriate account in the ledger, thus making one posting where formerly many were required. The work saved was more than appears at first glance, but this was not the main result, even from the mechanical side. This classification of entries in a many-column journal suggested the idea of devising several different books to take the place of one, partly so that the classification might conveniently be carried farther, partly for convenience in a growing business, of a clerk for each different

branch of accounting work, and partly so that the work of posting might be facilitated. This occurred through the farther classification and also because of the fact that there were now several books from which to post the ledger instead of one, and hence it became easier to get possession of one of them for that purpose.

The various books of original entry now in use are somewhat confusing to the beginner, but it is only necessary to bear in mind the fact that each one of them must be some portion of the old many-column journal, so arranged as to be adaptable to a special purpose. There is only one way in which an entry can get into the ledger without making trouble, and that is in conformity with the time-honoured two rules of bookkeeping, namely, "There must be a debit for every credit" and "Debit what comes in or costs something; credit what goes out or produces something." Every book of original entry must provide for operations in strict conformity with these two rules. The difference is merely one of form, with the purpose of securing greater

results with less work. One reason why other books were devised, was that the many-column journal continued to grow in size and number of columns until it became a very unwieldy book and still it failed to keep pace with the development of a modern ledger system, in which one central ledger was to act as key to all the rest through the establishment of governing accounts. That is a subject, however, which will be taken up at another time. It is merely mentioned here in passing as having been one of the influences leading to the greater elaboration of the books of original entry.

These naturally divide themselves according to the character of the transactions of the business in question. And it must not be imagined that two establishments putting out identical products, can use identical books and systems. Every feature of organisation, the character of the principal employees, relations with customers, and many other things have a bearing upon the matter. The main thing, however, which must be borne in mind is the character of information to be derived from the com-

pleted record, but an understanding of the ideal ledger system is essential to a full comprehension of this point, and we shall confine our present discussion to the more mechanical matter of convenient arrangement of original entries for posting to one all-embracing ledger.

Usually there are six divisions into which these naturally fall.

First of all it is necessary to purchase something, whether raw material for manufacture, or finished goods at wholesale, for resale at retail. Perhaps the next purchase will be supplies of some character for use in operating, and still another may be some article of fixed investment, as a machine, horse and wagon, or additional bit of land for storage or extension. These are all purchases on credit. The one imperative consideration is that they should be credited to the person from whom they were purchased, so that when the day of settlement comes, his ledger account shall show accurately the amount due him. It is vitally essential at this point, however, to keep the mind free from confusion regarding these two trans-

actions, namely the purchase to-day and the payment at some future date. From the standpoint of bookkeeping they have nothing to do with each other. We buy the goods, and the transaction is complete when we pay out our credit by making a note to that effect on the credit side of our friend's account on our ledger. This entry is formalised and prepared for posting in a book which we might call a purchase record, remembering always that it, like the other books of original entry, is merely a portion of the old intermediate journal so arranged that it shall be especially suitable to the purpose. We have abandoned the daybook, and the entry is made in the purchase record usually from a bill either sent with the goods, or mailed separately. This bill should pass through the hands of the receiving clerk (or be compared with his receiving records) and show by a notation that the goods have come in in good condition; it should then be audited as to prices charged and correctness of extensions and footings; then the question of deductions and allowances should be considered, and

finally, some one in authority, and fully conversant with the whole system and object of the accounting organisation, should indicate the account to which the charge or charges shall be made. This is a matter worthy of the closest and most competent scrutiny. For example, the dividing line between materials and supplies is very hard to distinguish on certain items; again, those items which are unquestionably supplies may come in in quantities so great that, instead of charging directly to expense account, they should be carried in supply inventory accounts and charged out by periodical entries. (This matter will be more fully discussed in the chapter on reserves, etc.) Another instance where both care and extensive knowledge are requisite is in charging purchases of things which look like new investment. This is dangerous ground. An entirely new machine, for example, may be rendered necessary by advancement in the state of the art, old machines and methods becoming obsolete and unprofitable. Unless the old investment is "charged off" the new must not be added to an account

which will make it appear to be an increase of valuable things owned by the business (i.e., assets). (This matter also will be discussed at greater length in the chapter on reserves, etc.)

The charge, or debit side of the entry having been determined and indicated on the bill, we are ready to consider the form in which it will appear on the purchase record. (There is no beginning so good, in reforming the accounting system of a concern, after determining the ultimate results desired, as a careful study of a large number of purchase bills.) It will be found that the face, or total amount of the bill, after the deduction of trade discounts, is not always to be credited, without reservation, to the "purchase account," i.e., the person or concern. There are various causes for deductions, which do not and should not affect the amount to be charged to the proper account. For example, the market value of certain goods is fixed at a certain price; every one else pays that price, and we may be obliged to do so again shortly; furthermore, that fixed price is the price at

which costs must be figured. Nevertheless, by especial agreement, we are allowed to deduct a certain percentage from the face of the bills; by a similar arrangement, we may secure the concession of a freight allowance which is to be deducted from the face of the bill when it is credited, but which ought to be included in the cost of goods and therefore in the charge to inventory or expense account. These deductions take the form of an especial revenue. These facts necessitate one or more columns on the credit side of the purchase record, in addition to the column in which the amount of credit to the personal account is to appear, both for the purpose of getting the whole entry on one line horizontally and also to save posting. These extra columns, if named according to accounts in the ledger, can obviously be posted in total from footings at the end of a period. The left, or debit side of this book calls for much more careful thought. The principal entries on that side will be those covering charges to the account or accounts which may be used to show the volume of merchantable

material purchased, whether it be raw stuff for manufacture, or finished goods for re-sale, or some other form of goods or chattels, the object of operation and the source of profit thereon. This set of charges may go into one column called merchandise, or purchases of material (or some other appropriate name). It may be distributed through several columns arranged according to some classification, as of the goods according to their nature, the margins of profit thereon, the departments of the business to which they belong, or some other consideration. In addition to this main group, a sundries column for unusual charges, like purchases of machinery, should be provided. (This column can, of course, not be posted in total.) There must also be one or more columns for entering charges to expense, of supplies, and of bills for consumption of gas, water, etc. If one or very many expense accounts be maintained, it is usually best to confine all such items to one column (an exception may be made in the case of one or two accounts to which a large number of charges must be made).

Where all expense items are confined to a small number of accounts, a column may be provided for each. In general, it is well to avoid increasing the number of columns. It is better to recapitulate than to use very bulky books of original entry, in most cases.

It is undesirable, at this point to go too far into detail regarding the forms of these books, because there is a broader consideration in their make-up than any yet described and one whose influence is paramount to everything else. It is the character and organisation of the ledger system, and will be discussed in the next chapter.

The other five sources of original entry are, in the order in which it is often found desirable to take up their consideration, the record of cash paid out, the record of sales, the record of cash received, the record of petty cash disbursements, and the record of all entries which do not readily fall into any one of these classes, such as adjustments between two accounts already on the books, entries of bills or notes received from customers in lieu of their open accounts on the ledger, *et cetera.*

There is another source of entry which has not been here considered because it belongs, to a greater extent, to the realm of department and detail cost accounting, and will be discussed under that head. It need not to be taken up here because, unless we go into the cost question, sufficiently illuminating entries on the debit side can be made in the record of cash paid out at the time the pay-roll checks were drawn.

Reasoning similar to that used in describing the purchase record will make the other books clear to the mind. The book was here described merely to illustrate the line of thought followed in breaking up the old intermediate journal into various other and more convenient records, and to suggest to the reader's mind an example of the influence which that disintegration has had upon the mechanical side of the subject—the side which may reasonably be called the art of bookkeeping, as distinguished from the science of accounting.

The effect upon the science comes through the fact that this process of development has made it possible to obtain results which,

both in their timeliness and in their intrinsic character and value, are greater and more potent for good (or evil) than any results which could have been obtained without these changes.

These results are made possible by the elaboration of the ledger system, which, in turn, would have been a practical impossibility had we continued to post the ledger directly from the daybook. Even the many-column journal would have been an exceedingly sluggish channel for the even flow of material, in the form required to spread it on the face of a well-laid-out ledger system. The next chapter will take up that subject.

CHAPTER III

THE REORGANISED LEDGER SYSTEM

THE "second book" or ledger, which came into existence merely as a convenient place to record, on separate pages, the items of the longer and more active accounts, and later on absorbed all credit accounts, both for and against, became a very burdensome and unwieldy machine with the increase of business volume and complexity, which led to double-entry bookkeeping. Ledgers of this period were immense in bulk, and the work of posting all transactions from the various books of original entry to one great ledger came to be more than one man could do.

Here let it be understood that the purpose is not so much to be historically and chronologically accurate, as to present in a graphic manner the conditions and causes which led to certain developments, with the

view of making those developments and the reasons therefor more easily understood.

To obviate this purely mechanical difficulty, the ledger accounts were divided among two or more books of the same form, the accounts were arranged alphabetically, and the operation was exactly as before. It was necessary for each ledger clerk to go through all books of original entry, selecting those accounts which belonged to his book. Another plan of division was to include all sales accounts in one ledger, and all purchase accounts in another. This was the first step toward the modern classification of the ledgers according to the character of material belonging to each and marked the second great step toward a more scientific understanding of the whole subject.

One great disadvantage of having all accounts in one or two ledgers was the amount of information which was open to the office force generally. In fact, the only thing lacking to enable any bookkeeper to know the exact condition of the business was the value of inventories when taken.

It was necessary in "closing the books" to enter these inventories (this will be explained in the next chapter), hence there could be little secrecy about the most vital affairs of the business.

This consideration led to carrying the principle of segregation farther, and the so-called general ledger came into existence. In this ledger were carried all those accounts which were neither sales nor purchase accounts, and even some of these accounts were included in this ledger, which, for obvious reasons, was also spoken of as the private ledger. This arrangement made possible a distribution of work among any requisite number of clerks and left the private affairs of the business largely in the hands of a confidential man, but it was a transitional stage, and, as such, had serious disadvantages. For example, a trial balance involved the absolute accuracy of all the work on all the ledgers, and condensed statements could not readily be made. Everything was in readiness, however, for the next and final stage of development. It became evident that if the books of

original entry could be so arranged that total figures, for the period, of all postings to any certain ledger or group of ledgers, could be easily incorporated in a governing account in the general, or private ledger, the problem would be solved. This ledger would not only become independent of the others and self-balancing, but it would contain within its own pages a gauge by which to determine the accuracy of the work on the others. At the same time the values of things owned or owed, as shown by the other ledgers, or any other information entrusted to them would appear in condensed form in a statement of the balances of these governing or controlling accounts.

Two means of accomplishing the purpose presented themselves. One was by recapitulation of the books of original entry, and the other was by rearrangement of these books in such way as to provide columns whose totals could be carried to these controlling accounts. The latter course, at first glance, appeared to present the objection of greatly multiplying the number of

columns necessary to be introduced in each of these books. More careful examination removed much of this apprehension, and disclosed the fact that in some instances the columns already in use were adequate to the purpose, by supplementing their work with a small amount of recapitulation, while in other cases the addition of one or two columns was sufficient.

For example, the purchase record already briefly described was furnished with two columns only on the right, or credit side. One of these columns provides for credits to the personal accounts in the purchase ledger, while the other is for deductions or allowances. Obviously the total of the first is complete in itself as representing the aggregate amount to be credited to that subsidiary ledger which has been entrusted with the record of extension of our good name or credit in exchange for goods or other values. The second column contains items which we have already spoken of as especial revenue, in character. In so far as we have gone, such accounts are still carried in the private or general ledger, hence this

column, in one item, or split up and recapitulated, according to the custom, would go directly into one or more accounts in that ledger.

The debit side begins with columns for the value of goods purchased. These might be called merchandise inventory columns. The corresponding accounts would be carried in the general ledger (unless an inventory ledger be maintained, an explanation of which will appear later) and again there would be no question of a controlling account, for the very good reason that these items are posted to no other ledger. The sundries column contains items mostly chargable to general ledger accounts, though an occasional charge to a personal ledger may appear, in which case it is to be posted in detail (recapitulated if there be several) to the appropriate governing account. Of the expense account columns the same is true as of the inventory columns, unless an expense and revenue ledger be operated (explanation later) in which event, naturally, the totals would go to expense and revenue governing account.

We might, with no great variation of result, go through the other five sources of original entries, but the above is sufficient to illustrate the principle and it seems better to avoid going too much into detail regarding forms, whether of original entry books, or ledgers, until the underlying principles shall have been more extensively discussed. The aim is to build a foundation of general knowledge of the bearings of things before laying too much stress upon the exact manner of doing them.

The vital thing at this point is that the reader grasp the idea that from a rough memorandum book of no particular form, and with no fixed laws of usage, and telling nothing complete or comprehensive about the business, there has evolved, by natural and inevitable stages, a system with a governing ledger at one end and a variety of conveniently arranged books of original entry at the other, while between the two comes in an elastic series of detail ledgers into which various classes of transactions or entries are copied or posted in such a way as best to serve the purpose of those

who are to be guided thereby in the formulation of the policy of the business.

In the beginning, the use of a diary or daybook was forced upon the business man simply because his memory was not good enough to keep up with a growing business. Next came the evolution period, and now we have a scientific system, self-proving and the source of endless enlightenment when properly utilized.

The key to the situation is the governing ledger, because it shows the facts in concentrated form. A balance sheet from it gives the condition of the business, showing in a single item the net values, for or against, which the subsidiary ledgers show in detail. It is with the coming of this phase that certain basic principles have established themselves, in such manner as to warrant the application of the term science. In many ways, the mental processes by which a well-organised system of accounts is to be created and enforced in any business are exactly parallel to the action of the mind in solving "original" problems in geometry. We have the premises and

the conclusion. We have studied the principles and their application to other problems. The task before us is the construction of a network to connect premises and conclusion, and it is safe to say that the mind that halted at original work in geometry would do well to avoid the attempt to do creative work in accounting. Everything must be proven, and, before any device is tried, exact reasoning must be brought to bear, in order to determine whether it will work. Unmathematical minds may get a good knowledge of the subject, and may even successfully operate the most elaborate system, but the safer course for them is the avoidance of creative work.

Another great difficulty arises from the fact that all the materials to work with consist of unformulated and almost intangible things. There is such an infinite variety of conditions to be taken into account that no set rules of procedure can be laid down, and no stereotyped forms can, with safety, be employed. From the peculiarities of doing business which affect

the form of the original entry, through to the hobby of the owner as to the character of information desired from the balance sheet, or the cost records, there are many things unique to each system, and to provide for which the form must be especially adapted. The result is that each new system is like the solution of a new problem in lines, angles, surfaces, and solids; and in addition to a knowledge of what has been done, and why, a certain creative or inventive perspicacity is necessary to success. This fact need not discourage the business manager who desires to understand the subject, but feels the absence of this faculty. The percentage of the class who learn and understand the printed demonstrations is much greater than of those who find original solutions.

We have occupied ourselves with the most general phases of the subject up to the present time. In the following chapters we shall begin to get nearer to technicalities. We shall discuss the opening and closing of a set of accounts, and shall then proceed to a consideration of the char-

acter of the various accounts and classes of accounts. This will naturally bring us to the question of the treatment of these classes of accounts in the ledger system, and to their meaning in and bearing upon statements of results. The balance sheet comes next and that will be quite naturally followed by a discussion of valuations, revaluations, inventories, reserves, etc.

CHAPTER IV

OPENING THE LEDGER

IN the days of memorandum-book accounting, the opening of a set of books was a simple matter. Sometimes it was attended by certain formalities, as the inscribing on the first page of the daybook the agreement between the partners, but it remained for experience in the development of the ledger system, and its bearing upon the question of gain or loss, to emphasise the importance of beginning with an exact and careful statement of just what the business owned and owed at the start. In no other way is it possible to arrive at a comparison with the condition at a later date, for the purpose of ascertaining the amount of gain or loss on the operations of the period.

The first step, therefore, is to make a list or inventory of everything owned and owed. This list should be carefully and closely

scrutinised by every one concerned. The importance of this can not be overstated, because it bears upon every relation, and affects the whole history of the business. The net value shown by this list is naturally the basis of credit for the first period, or until accurate accounting shall have shown an accretion of further values.

This list should be made very clear and very explicit, so that any one interested may take it and check off the items and their valuations with the things listed. The possessions, or assets, consist of cash, of object of operations (as material or goods), supplies, plant, real estate, securities, facilities (as water-power or other natural and tangible means of producing income or reducing expense below the normal), and those portions of the realisable credit or good name of others which may belong to the business. Contracts which have cost something and which are certain to produce a net value, as well as valuable patents and privileges, may also be included. There is also a condition under which it is legitimate to include the good will of an estab-

lished and successful business in this statement, but there is no occasion for this unless the business ownership is undergoing some change, as a transfer to a partnership, to new owners, or to a capitalised company. It is for the new interest to insist upon the production of this document, and to secure careful and competent scrutiny of its showing. Investors lose much money every year by putting it into enterprises without taking this most simple and necessary precaution. To take such a step is the height of folly, and it is equally unwise to accept a list as presented, without having it thoroughly analysed. Nor is it ever necessary to do so. In every city in the country are to be found able men following the profession of business accounting. To the average investor the services of such a man are even more important than those of a lawyer, and this fact will in time be recognised. No investor who is not well versed in the subject will put his money into any enterprise without the report of a competent expert. We do not now invest in mines without first endeav-

ouring to get the judgment of a competent and trustworthy engineer upon the three vital questions of mine, money, and management. Other enterprises are just as hazardous. Unless there are the field, the means, and the management in proper proportion and combination, it is just as dangerous to invest money in a factory as in a mine, despite the fact that there may be a building which can be seen, machinery which can be heard, and material which can be inventoried. These things are at par only when supported by sufficient working capital and adequate brains. The next advance in business solidification will come with a recognition of the field of the competent accountant as an adviser to the investor, and that will be followed by the introduction of these trained business engineers into boards of directors as representatives of the various interests. This is not said so much of the generality of men now practising the profession, as of the profession itself and of the modern tendencies of business organisation. With this development will come as complete a recognition

of the responsibilities of boards of directors as already exists in older countries. The application of exact science to the operation of a business, and to the representations which it will make regarding its condition, will go farther than any other development toward bringing us back to sound business, banking, and currency principles, from which we have made so long a departure, and on account of which departure we and our irrational periods of alternating exaltation and depression are to-day the laughing-stock of the civilised world.

One more generalisation before returning to the technicalities of the "opening." There are two influences opposing the development of sounder methods and greater publicity and frankness of statement. Both are selfish, one ignorantly and ill advisedly, the other shrewdly and designedly. The first is the desire of the small and weak to conceal the truth in the hope of being over-estimated. The other is the realisation on the part of powerful interests that this condition places the whole community within their power. The banks

first, because our present system discourages the extension of facilities to the smaller enterprises; the public, because it is considered safer to invest in large enterprises and because concealment of true condition is the opportunity required for manipulation of market values of securities; and finally the small man who, because of his lack of support from banks and the public, is the more easily absorbed. In this manner the indisposition of the small man to show his true condition results in making him cooperate with his greater enemy against his own well-being. The remedy lies in more truthful and more uniform accounting, from which the banks may know the exact condition of all their clients, so that all may be treated alike. This is the great foundation which must be built by the business community before legislation on the banking and currency questions, however wise, can become freely operative. When the solidity of commercial paper becomes an established and certain quantity, the banks and clearing-house organisations will need little help from legislation.

The basis of this reformation lies in the manner of making the list of things owned and owed, or of assets and liabilities with which to open the books, and its continuance will depend upon the truthful presentation of these facts and the intelligent operation of proper accounting methods in recording the changes due to operation of the business during any period.

Having made a careful list of every valuable thing owned by the business, placing the money value opposite each item, the next step is to ascertain just as carefully everything for which the business may stand liable. This should include not only the extension of its credit for any cause whatever, but also accumulations of unpaid taxes, interest, or other dues, whether or not there be a visible record. Another point which should have careful consideration is the liability on any disadvantageous contract. If contracts exist, they should be carefully analysed, to ascertain whether there be an equity of value in them, or a liability to loss. In either case a valuation should be made and included in this list.

We have already seen how it came about that things owned—assets—appear on the debit or left side of the page in early accounting. This arrangement is followed in making the list, or balance sheet, for the two are identical. Obviously if the balance sheet shows a greater total on the left or debit side, the assets aggregate more than the liabilities, and there is an equity in the business. A greater total on the right, or liability side, means insolvency and there is neither need nor the right to go farther, because this balance is the basis upon which the world not only gives credit to the business, but takes the chance of entering into contract relations in the hope of mutually advantageous dealings.

The excess of assets over liabilities, the equity as shown by the list, is what belongs to the owner or owners of the business, and yet it does not morally confer the rights of full ownership so long as the business has any unpaid liabilities. Its creditors, for their own protection, and the intelligent and appropriate departments of government, for the protection of the public from

the incidental effects of disaster, have the right to know how matters stand, and the general course of events. Indeed it is to the advantage, directly or indirectly, of every man to have *every one else* properly supervised, within reason, in this as well as in other ways.

This equity is the amount that the business, as an imaginary person, owes to the men who are called its owners. It is perfectly logical, therefore, to credit the amount to their personal account on this list, it being understood, however, that this obligation of the business stands last as to precedence in every way. If the things included as assets be not sound, or if the list of liabilities be incomplete, this equity credited to the owners in the list will be inflated, and the public will be given a false statement as a basis for credit. In the case of the formation of a stock company, the volume of issued shares purports to have some relation to this balance or equity, and the laws of most states declare that such shall be the case. The fact is, however, that there are many ways of get-

ting around these provisions and many pretexts for doing so, notably the much abused "capitalisation of earning power." Instead of a balance sheet equity determining the amount of shares to be issued, the volume of earnings for a greater or less period is calculated, and this amount averaged among the years it covers. Then the average annual income is capitalised. In other words the amount is divided by as many hundredths as are equivalent to the rate of dividends which the promoters promise to investors. The figure thus reached is usually much higher than a balance sheet equity would be, and the whole or a part of the enterprise is disposed of at a figure in excess of that at which the promoters have optioned or purchased the property. In this case some fictitious entry will be found on the left side to bring the apparent equity up to par with the amount of issued shares. The practical remedy will be the prevention of the assignment of a nominal or par value to the shares, and the consequent necessity of ascertaining their actual value before purchasing. In that case to represent them

as worth a certain price would be equivalent to a positive statement either that the balance sheet equity warranted the figure or that it had nothing to do with it. In either case the careful investor would desire to know what that equity really was, and, knowing into how many shares it had been divided, could easily decide what he would be willing to pay for them. It is not claimed that inflation would cease, merely that it would become necessary to lie a little more openly and with a little less support from established and time-honoured custom.

It is the purpose of this chapter not only to explain the steps of opening a set of books, but to emphasise the importance of doing it rightly, and to show the bearing of the method adopted upon other interests.

The most important part of the work is done when the list has been made and the owners credited with the equity. This entry may be made under any of a large number of captions, as the name of the individual or the separate names of two or more, showing the portions belonging to each opposite their respective names, or a

term, like investment, or capital account, may be used. In the case of a capitalised enterprise the usual custom is to use the term capital stock, or if there are two or more classes of shares, to use a designating title and enter the amount of each separately. If any portion of the shares remains unsold, an off-setting entry is made on the left or debit side under the title treasury stock and the par "value" of such shares set down among the assets. It is not an asset. It merely neutralises the effect of too large an entry as the liability of the business to its owners; and helps to confuse them in any effort they may make to ascertain, from a scrutiny of the balance sheet, the real value of the equity.

The remainder of the operation is purely clerical. Any ledger may be used, a page or part page being set aside for each item on the list, and named accordingly. The figures opposite the various names in the list are introduced on the side of the ledger page corresponding to that on which they appear on the list. The date is entered, and any desirable particulars written in. If

subsidiary ledgers are to be operated, those accounts on the list which belong to each are totalled and the amount entered in a governing or controlling account, as already described.

All that remains is to enter such accounts similarly, but in detail, of course, in the subsidiary ledgers, and to decide upon the forms of books of original entry.

The process described in this chapter should be carefully carried out before proceeding with the business. The manner in which it is carried out is of great and vital importance and it should be one of the first activities of the owners or their representatives to see that this has been done, not only with promptness and accuracy, but with fairness to all concerned. It should never be delegated to any one individual. It may safely be said that the board of directors that fails at its first meeting to go thoroughly into these questions begins its career with a failure in one of its most vital functions, and lays a foundation for future weakness in its conduct of the affairs of the business.

CHAPTER V

CLOSING THE LEDGER

THE operation of closing the ledger is second in importance to the opening, only because there is not so great opportunity for gross error and misrepresentation, providing the opening has been properly made. This is true because any disproportionate change of the ratio between total assets and total liabilities during a given period, if not too long, is likely to arouse the curiosity of some one. Let it not be supposed that the closing may be neglected safely, however, even when the opening is known to have been properly and honestly made, and the larger the capital invested the more important becomes the scrutiny of every step in the operation, both because the closing in itself affords opportunity for inaccuracy and because the net result as shown thereby should be suggest-

ive of many things regarding the manner of handling the business and its records for the period. For example, if the final balance sheet shows a loss, or a smaller profit than seems reasonable considering the known margin of gross profits over prime cost of purchase or production, there may have been an erroneous or deliberate systematic mishandling of the business or of the accounts. The former would be most likely to appear in the general expenses. Extravagance or worse than that may have been making away with funds which belong to the owners and should appear in the final balance sheet in accretions to their capital for the period. The latter should be looked for in the charging to expense accounts of sums of money legitimately chargeable to some form of investment and therefore properly showing on the balance sheet as such accretions. The individual owner, managing his own business, has no particular motive for such courses, beyond the evasion of taxes, perhaps; but where there are several owners, or where the enterprise, be it a stock company or not, is

managed by others than the owners, there may be various motives. The most common is a desire to reduce the apparent value with a view to subsequent purchase. An example of this would be the building of machinery to increase the output, charging the labor and material to expense accounts instead of investment accounts. One of New England's most prominent enterprises was so dealt with only a few years ago. The representatives of the original owner on the board were honourable and able men, but so uninformed on the subject of accounting possibilities that the managers kept them for years in ignorance and, when their plans were ripe, effected their purpose, and made a large profit on the operation for themselves and for the New York and Boston "financiers" who helped them carry the transaction through.

On the other hand, there are as frequently motives for inflation, and the difficulty attendant upon neither operation is very great, while detection is a practical impossibility unless adequate knowledge of the science of accounting and a

motive to its use happen to be in the proper quarter and supported by adequate authority. This is the point at which the employment by various interests of competent and responsible accountants to represent them in boards of directors becomes an insurance against error and maladministration. Such working directors should be well paid so long as the enterprise is successfully and honestly conducted, and should be dismissed and publicly denounced when they fail to live up to the highest possible standard of responsibility. It is peculiarly true of this relation that the greatest asperity of judgment of a man's conduct is the best means of elevating and dignifying his profession. The accountants of the country should be like our judges, indifferent to abnormal gains for themselves, and absolutely incorruptible.

The closing consists of making a list of all the account balances from the whole ledger system, or from the governing ledger if there be one (because it contains certain accounts which epitomise the other ledgers). Then from this list or trial balance, make a

new list which shall show every account that represents anything owned or owed, even including those accounts whose face value is not the same as the value of the thing represented.

For example, the old-fashioned merchandise account showed a balance which was made up of three elements, two on the debit side and one on the credit side. First there was the value of the merchandise, or inventory with which the period began; then there were the two contemporaneous elements of sales and purchases on the credit and debit sides respectively. The balance was the difference between inventory plus purchases, and sales. Obviously, if all these items were priced alike, the balance of the account would represent the value of merchandise on hand at the close of the period; but no profit on sales would have been made. This difference in price at which the sales are entered is the source of profit or revenue. The total volume of it represents, on a paying business, the amounts which have been laid out for expenses of operation and the amount of

accretion to the excess of assets over liabilities, or net profit. In making up the balance sheet this margin must be eliminated, and the merchandise must be entered at its actual present volume and value. If it were possible to know the total of the credit side of the account, priced as the debit side is priced, that figure could be substituted for the credit side of the account and a new balance found which should represent the inventory. Except where a very correct cost system is maintained, and material prime costs applied in posting sales, this is a mechanical impossibility and it becomes necessary to make up a physical inventory of the merchandise on hand. Where the sales have been made at an advance, however small, over cost and purchases have been normal, this inventory figure will be larger than the balance of the account (except sometimes in manufacture where there may be a very great discrepancy in volume of goods in process, etc., shown in the two inventories). This excess of the actual inventory value over the balance of the account is the same (leaving out of account

the question of altered pricing and losses through damage, theft, etc.), as the margin by which the whole volume of goods sold, figured at selling price, exceeds the same volume of goods figured at cost price, and represents the gross margin. In other words, upon revaluing any asset represented by a ledger account, if the inventory value is more than the account indicates, the difference represents a margin of revenue. For the balance sheet we need actual values and the whole list should be inspected with this in view, including those accounts which represent other values than merchandise. Many of them may have decreased, others increasing, while others remain stationary in value.

Having made this list of assets and liabilities from the trial balance, correcting the figures to make them represent the actual safe values, we find, if there has been either a profit or a loss, that we have a statement which does not balance. Our assets and liabilities were in balance at the beginning, taking into account the entry representing the owner's investment (see previous chap-

ter). If the ratio has changed, if things owned and things owed, in the aggregate, have increased or decreased disproportionately, there has been a gain or a loss. Obviously, if the aggregate assets have outstripped the aggregate liabilities, there has been a gain and *vice versa.*

At this point let us return to the trial balance. As we removed balance sheet items therefrom, we checked them off. If we altered a balance we entered a compensating amount and left the item, removing only the changed figure. The trial balance, in its mutilated condition, presents a list of accounts and parts of accounts which have been discarded in making up the list of assets and liabilities. They are neither one nor the other. Close scrutiny shows that we have left only those accounts which represent expenses on the debit side, and those which represent revenues on the credit side, chief among which latter stands the compensating entry made at the time of the substitution of merchandise inventory for the balance as shown by the merchandise account.

For example, merchandise account balance, $10,000 debit. Inventory, $15,000. The substitution of the latter figure on the debit side calls for the introduction of a compensating or offsetting figure on the right side. Now, removing the $15,000 item for use in the balance sheet we have a $5,000 item left on the credit side of the mutilated trial balance. We have maintained the balance, because we have added the same amount to both sides. It being true that nothing has been done to disturb the balance, it is obvious that the two sections of the statement, i.e., the new balance sheet and the mutilated trial balance, or list of revenues and expenses, which it has now become, will balance if again incorporated into one statement. Therefore the differences shown by subtracting the lesser footings from the greater will be identical in the two statements, but on different sides. If the revenues have exceeded the expenses, the assets must have outstripped the liabilities, during the period. The revenues have only two places to go. They can go only to paying expenses and to changing the

ratio between assets and liabilities. If they are more than adequate to the former, this fact will appear not only in a comparative list of revenues and expenses, but it must also appear in a comparative list of assets and liabilities as affected by the operations of the period.

At this point it is well to stop again and note the opportunity which this process affords for error in showing the results of the period. Every cent erroneously charged as between asset and expense accounts affects this showing, and every error in making up the inventories which are to be substituted for the account balances also affects it directly. In every step of the process there is chance for inaccuracy, but particularly in the making of a detail valuation or inventory of a large mass of varied and small items of merchandise. Here, with the best intentions, accuracy is very difficult, and conversely, systematic deception is very easily hidden and very effective, either in unduly improving or impairing apparent results.

These two statements having been made and their accuracy determined, the next step

is to close all of the items of the expense and revenue statement into some suitable account provided for the purpose, by entering the amount each ledger account shows on the opposite side of that account, at the same time entering it on the same side in this closing account as it originally appeared on in the account from which it comes. This process completed, we have in the closing account an exact copy of the expense and revenue statement. We have already seen that the difference shown by that statement was equal to the difference shown by the balance sheet statement but on the opposite side. Therefore the difference of this new, or closing account, if entered in the balance sheet statement under the caption of Loss and Gain, as used to be the custom, or as results of a certain year, or as surplus, or even if it be merely added to the owner's credit account, the balance sheet will balance; we shall have only asset, liability, and capital and surplus accounts open on the ledger, and we shall be ready to proceed to another period of operation.

CHAPTER VI

ACCOUNT CHARACTERISTICS

IN most things an exhaustive understanding of methods is impossible, apart from a clear understanding of the reasons. This is true of accounting. In a larger sense, it is true of business methods generally, that they are very apt to be loose and unsystematic, unless founded on that executive science which is inseparable from a more or less clear grasp of accounting reasoning. The day is past when the duty of the executive is to perform a part of every function of the operating force. His field has become more systematic and scientific. He is no longer a slave driver either, and he should not be. It is his province to devise plans and methods which shall result in more effective work on the part of the force, with better support through the policy of operating the business, and encouraged by the showing which he lays before them of

what is being accomplished. None of this work can be done as effectively, supposing other qualifications to be equal, by the man who cannot read the history of what is being done, as currently recorded in the accounts. Furthermore, an executive who is not thoroughly versed in the reasons as well as the methods of accounting is on dangerous ground, because the record of his operations is being made in a language which he can neither read nor speak, and he may find, when the story is translated to the owners, that it fails to corroborate his own more general statements. The showing from the books is more likely to be accepted than any other, on the ignorant theory that "figures do not lie," and this showing may have been made unduly unfavourable through ignorance or design on the part of another officer, or even of a subordinate.

The insight necessary to correct reasoning in devising methods, and to proper supervision of the records at the time of their creation, can exist only where there is a knowledge of the subject sufficiently acute to enable the executive to detect, in-

stantly and always, the effect of each original entry upon the final showing to be made by the balance sheet.

The source of this knowledge is careful analysis of the character, derivation, and bearing of the ledger accounts. The cardinal principle of debit and credit must be clearly in mind. Debit or charge, and enter on the left, what comes in or costs something; credit, and enter on the right, what goes out or produces something. It is also helpful to remember that accounts were started originally from an outside standpoint, not from the standpoint of the business. That is, John Jones buys something. A ledger account is opened for John Jones' account with the business, not for the account of the business with John Jones. He, the outsider, is charged on our books with the value of what he has gotten. Under the operation of the cardinal principle, this account has come to mean a record of the amount of John Jones' credit which has come into our hands, or cost us something, i.e., a portion of merchandise or other valuable thing. On the account or

accounts representing what we have parted with in order to get that much of John Jones' credit into our possession, we credit an equivalent amount and the transaction is complete. This entry has nothing to do with the question of whether we shall ever get from John Jones anything more tangible than a portion of his good name. Later on, if he pays, cash comes in, and we part with that portion of his credit which we have been holding as one of our assets. In these transactions something has come in, and has cost us something. There is a class of transactions where we part with something, but nothing material comes in. These are the transactions of payment of cash or of our credit for expenses of the character of dues and wages. These payments are necessary to operation, but require most careful watching, both to prevent extravagance, and to avoid the error of charging to an expense account outlays which ought to appear on an account which represents a thing which has come in as well as has cost us something. The dangers in this field have already been mentioned. There are

transactions on the border line which require the most careful watching. (The two places in the machinery where the most of these inaccuracies occur are in the marking of the bills before they are entered on the purchase journal, and in the distribution of the pay-roll, explained later.) These transactions consist of parting with something for some other thing which may appear at first glance to be an addition to values, while in reality it is not, and *vice versa.* For example, even so stable an article as a new machine may be an expense rather than investment if it is to replace a discarded one of similar type and productiveness. On the other hand, an apparently evanescent thing may increase the value of some investment, or a purchase of supplies may be very large, for speculative purposes, and the unconsumed and undeteriorated balance on hand is as surely an asset as though it were material for manufacture or finished goods for resale. This is one of the favourite agencies of the wrecker, the other principle one being the detail inventory. Indeed the two methods are identical except in their

mode and tense. Another point which should be touched upon here, but which we shall discuss more fully later, is the necessity of diminishing the volume of any investment when for any reason it shall have become actually less valuable than it was at the time of recording it. We have already mentioned this matter in discussing the closing of the ledger. It is just as important to increase the recorded value when the actual value substantially and permanently increases (in order that the improvement may show in the period to which it belongs) unless, for good reason, and with the consent of all interests it shall be deemed wiser to carry investments at less than actual values. The method of doing all of these things will be explained in the chapter on reserves, etc.

Obviously, in railroad and other heavy construction, there is great opportunity for inaccuracy in these matters. In banking and financial enterprises the necessity of close and careful attention is very great, on account of fluctuations of values of investments. Mining values are especially sus-

ceptible to change. For example, a heavy development investment may suddenly become valueless through the disappearance of the ore body, or an unexpected difficulty of mining or treating, rendering the processes too expensive to be profitable. The question should be constantly present, what are our investments actually worth now? It makes no difference what they were worth when recorded.

This distinction between investment and operating expense, and how to create and maintain it in the records, should be very clear to the management, because of its bearing upon the policy and story of the business.

The cash account is susceptible of no inaccuracies of the character above mentioned either in entries or inventories, and only in valuation in the event of some such unusual condition as a premium upon gold, or the discovery of a defalcation. A dollar comes in. It can be charged to nothing but cash. Cash can be nothing but an asset, and is not normally subject to depreciation in value while on hand.

Accounts receivable have a less stable character, and should not be accepted at face value without investigation. There is, of course, no opportunity for confusion with expense, but even when the work of the credit department has been properly done many uncontrollable causes may arise, leading to a depreciation of their value. It is customary to meet the probabilities in this direction by regular entries of a certain percentage on a reserve against losses. In addition a periodical scrutiny is desirable. This can be made almost automatic by the establishment of some such collection system as that outlined in a subsequent chapter.

Notes or bills receivable we have purposely avoided in our effort to grasp underlying principles, with as little detail analysis as possible. John Jones, above mentioned, finds, when the day comes for the payment of his account on our books, that his cash is not very plentiful. He thinks that we may need the money, and he knows that it is an awkward process for us, and frequently an unsuccessful attempt, to take his ledger

page to our bank and get a loan on it as security. He knows that our chance at the bank would be better if he wrote on that page, " I owe the above amount, it was for value received, and I will pay it " on demand, or a certain length of time after date. This he approximates by writing a synonymous statement on a note form and sending it to us to hold, or to use as we see fit. If there is to be a further lapse of time before payment, it is frequently better to have such signed evidence of the debt, and furthermore such notes usually are made interest-bearing. From the standpoint of our accounting, his action has resulted in wiping out our hold upon his credit in the form in which it appeared on the open book account, and giving it to us in another form. We must therefore offset the charges on that book account by crediting this note (the entry is made in the adjusting journal). There must be a balancing entry on the left or debit side of some account. We might carry a separate account for each such note received, but that is unnecessary, because, unlike the book account, or credit

account of John Jones, which is being increased by daily purchases, perhaps, this is a complete transaction. The face of it will not be altered. Therefore we open an account which we call notes or bills receivable, and enter this and all other such notes, regardless of whom they may come from, in the same account. This account might be called "a ledger account showing all amounts which have been transferred from debtors' open accounts to debtors' accounts evidenced by written acknowledgments thereof with stated date of promised payment." This account varies, in its handling, from the others, by the fact that the line on the credit side of the page opposite the debit entry is left blank until the note is sold or paid, when this line is used to make the entry. In arriving at a balance of this account it is necessary, naturally, always to add the whole of the credit side. Old footings cannot be trusted because of the fact that a former blank line may have been filled in the interim. In passing, let the reader avoid confusing this account with the auxiliary record which is kept for the sake

of more complete detail than appears on the ledger. Many executives also enter due dates on a reminder diary so as to be promptly informed of delinquencies. In financing, it is always well to reckon the difference made or lost on interest by holding these notes or selling them.

This account, like the two just discussed, is immune from confusion with expense accounts in entering the charges, but it requires very careful scrutiny and revaluation or inventory from time to time, particularly if there be many entries or long periods. Furthermore, the sale of such notes usually involves their indorsement, i.e., we must sign our name on them (usually on the back) as guaranteeing their value. Our bank may not know the maker of the note, or the endorser if it be "two name" paper, hence our name must also be added. Our responsibility does not cease until the maker finally pays the note, therefore the careful manager, through his credit department, will continue to watch it, and the condition and conduct of the maker. Co-operation in dealing with the object of this account, and

the credit back of it, between the whole community of banks and of business organisations, will be the only safe foundation on which to build a proper banking, currency, and commercial system for this country.

Plant accounts are susceptible to depreciation, both through deteriorations of buildings and decrease in value or availability of real estate. On the other hand, buildings may be greatly improved in value by certain expenditures, and even rendered more permanent and lasting (for example, concreting foundations or cementing floors and walls). The value of the real estate may enhance greatly and even suddenly. This account requires careful watching.

Machinery, including power plant, is a subject for the most expert and careful analysis, because there are so many elements to consider. First is the wear and tear; second, the state of the art, that is, the invention and possible adoption by ourselves or our competitors of better and less costly processes for producing the same result; third, the demand of the trade and the prices which competition may have created.

It would require the pen of an engineer to do justice to this subject, in addition to all that might be said by the executive, and the result would be a volume of considerable size. These statements, thoughtfully considered, would seem to imply that there is opportunity for inaccuracy in charging new outlay, as between investment and expense. The inference is correct, and the proper handling of the matter depends upon an exhaustive knowledge of technicality in the business in question as well as of accounting science. Frequently it is necessary, where no one man possesses a comprehensive working knowledge of all these matters, to call together the mechanical heads directly concerned and the members of the sales force directly affected by the output, and question all closely, from their own standpoint, not, of course, from the standpoint of accounting. From the operating department we must know what effect the outlay has upon volume and cost of production; from the salesman we must learn the demand, the attitude of rival institutions, and the probability of price changes

under improved methods. The executive must possess the knowledge of why he asks these questions; in other words, he must understand the bearing upon them of scientific accounting principles. Many a concern has been reduced from busy affluence to innocuous desuetude in a period of years during which the returns available for dividends have been unconsciously and unintentionally inflated by a failure on the part of executives to see the effect upon machinery investment of progress in the art. The value has been kept up in the balance sheet, large profits have been shown, and funds which should have been reserved for improvements and replacements have been paid out in dividends. All this can be prevented by the executive who acts on sound principles, and is content to have his reward in heaven. From the owners' standpoint, the strongest of all objections to a profit percentage contract with managers lies in this field. Its dangers can be forestalled by a properly drawn contract, reinforced by adequate auditing of the charges by a committee of the board of directors. The fiasco

of the institution previously mentioned would probably not have occurred if the managers had been allowed a percentage of profits, and their accounting competently audited. It would have been their motive to make too good a showing rather than a poor one, and, with this properly checked, the result would have been greatly to the owners' advantage. A matter closely connected with all these considerations, is the tendency to ossification of the organisation. Each department sees its own functions only, and is very loath to alter them for the benefit of any other. This shows on the records only when we compare productiveness and costs with corresponding items in other and more progressive departments or enterprises. Sometimes the only opportunity for this comparison lies in inference from the salesman's report of what competitors are doing.

Inventories of materials or merchandise, and inventories of supplies in excess of current consumption, are of such character that it has always been customary to analyse them more or less carefully at least once

a year, since the passing of the time when a rough survey of a little store was sufficient to disclose the condition of the stock. It is impossible to treat it with so great indifference as the other inventories. Indeed a great deal has been done toward securing more and more frequent additions of it, either by recording its flow in terms of cost, or by ascertaining a reasonable average ratio between consumption and some constant, as direct labour. There are two plans for recording the flow; a strict warehousing system, and the application of cost figures to the detail sales record. Either is apt to be cumbersome, but can hardly fail to be profitable. There are few concerns, however, except those properly organised at the outstart, where either is instantly possible. The resort is of necessity to a system of ratios. This properly belongs in a discussion of the operation of an inventory ledger, and will be explained in another chapter. There is every opportunity for inaccuracy in making charges as between these accounts and the expense accounts, and one great source of power for good or

evil in the conduct of a business is the control of these inventories. Their infinite detail renders the auditing of them a discouraging task, but it can and should be done, and there are many means of precaution, chief among which is the assignment of departments to different groups of men each year, and the careful recording of a pricing system.

Investments in things other than the legitimate object of trade require especial attention, as real estate taken for debt, etc., etc. The question of value is omnipresent in financial business and calls for no extended comment here.

Another item which frequently appears among the assets is the deferred charge for some outlay which is expected to produce results over a longer period than the single fiscal one, and hence ought not to be included as a whole in the expense of the period in which it was made. In a very true sense this is an asset, because it is an agency working for the good of the business, although it is less concretely realisable than cash or merchandise. It will be treated

fully in the chapter on reserves. An expensive catalogue is an example.

The only other items appearing regularly among assets are treasury stock and deficiency accounts (old-fashioned gain and loss on the wrong side). The former is in no way concerned with the discussion of depreciation and valuation, being merely an offset to that portion of the capital stock account which remains unsold. The latter is merely a balancing entry created from the record of an excess of operating outlay over revenue during a former period of the business which began without sufficient surplus to cover that excess. The only way in which it can "depreciate" is by a period of successful operation. Managers generally dislike to make such a showing, and can easily avoid it in the handling of inventories. A business which appears to stand still for a considerable period should be carefully investigated with this fact in mind.

On the credit side we have what we owe, accounts and notes payable, neither of which is subject to the kind of depreciation we

have been discussing. We also have the capital stock or owners' accounts. These accounts represent, as we have already seen, the equity in the business, and fluctuate in value with the loss or gain on the business, less the amounts paid out in dividends. The surplus account has already been explained in the chapter on closing.

In addition to all these there is sometimes on the debit side an account of doubtful meaning and value. It may be called by a variety of names. Good will is a representative name applied to this account, and its purpose is to offset capitalisation at more than the equity in the business. Another account used for the purpose of keeping the current period's operations free from losses and expenses really belonging to the past is called "loss and gain, or results previous to present fiscal period." The balance of this account may be a debit or a credit one, as the preponderance of these surprise items chances to be unfavourable or favourable.

The distinction between assets and expenses should be sufficiently clear without

going into detail here regarding the latter. From the standpoint of this discussion of asset accounts, all expense accounts are exactly alike. Every charge to any of the expense accounts will come out of the revenue, or add to the deficit of the period. If it be an item which really belongs among the assets, its inclusion in an expense account will make the owner *appear* to be just that much less opulent, when the balance sheet shall be drawn off. There is little chance for confusion between liability accounts and operating revenues because of the intrinsic characteristics of these two classes, and because sinister motives, where they exist, can be more easily disguised among the items on the opposite side. One point regarding liability accounts which requires auditing in some instances, however, is the creation of accounts which do not exist, or the inflation of accounts for the purpose of collusive advantage to two or more operators, one of whom must belong to the accounting and buying organisation while the others have a foothold in the accounting and selling organisation of

the house in whose name the account stands.

Reserves complete the list on the credit side, and will be taken up later. A sinking fund account may also be carried where the amount is retained in the bank balance or actually set aside or invested in safe securities.

One object of the application of such close reasoning to the recording of the current history of a business lies in the fact that it affords the executive the weapon necessary to prevent drawing out of the business in dividends more of its life blood than is consistent with continued or increasing activity. It is, at the same time, the only way of telling the actual truth about the operations and present values. A comprehension of correct methods makes it possible to do both at the same time, for the amount of available money and anticipated necessary investments and expenditures can be brought into the discussion by a report supplementing the balance sheet and treating of the subject in terms of scientific accounting.

CHAPTER VII

VALUATION AND RESERVES

WE have considered the bearing of the original entry in creating a correct record of values; we have also seen that it is unsafe to rely altogether upon the original entry as a means of maintaining that record. Some reasons have been given for the careful endeavour to have the ledger show true values. There is a great divergence in the opinions of sound and able business men on this question, many strongly advocating ruthless reduction of values. The advocates of the system of showing correct values urge the importance of this for insurance purposes, maintaining that it is safer, if it comes to dealing with adjusters, to be in a position to show the values carried on the ledger.

A proper use of reserves for this purpose, instead of cutting down the account itself, makes it possible to show the values

and at the same time derive all the benefits of the most strenuous measures for preventing too heavy a drain in the form of dividends. It tells the whole story of what has been done, which is a very great advantage, at least to those who have no motive for concealment.

The creation of a reserve is very simple. For example, it has been decided to create a reserve of a certain percentage of the value of the buildings, i.e., to diminish the showing of the balance sheet by an amount which shall represent the supposed depreciation, or, regardless of depreciation, the desired reduction, in the volume of the account that purports to show the value of that investment. The old way is to make an entry at the end of the year exactly identical with that explained in connection with the creation of the balance sheet from the trial balance, where an inventory showed an account value incorrect. It is sometimes argued that this system does not remove the possibility of determining real, or original values from the account. Theoretically this is true, but practically the operation be-

comes more tedious than an insurance adjuster will undertake, first because these entries appear among a diversity of other credits (in most accounts), and second, because ledgers must be renewed constantly and balances, only, are usually carried forward. The detail is therefore eventually scattered through a large number of books, the loss of some of which, in a large fire, is almost inevitable. Furthermore the annual charging off of decreases in valuation, or depreciation, has a serious disadvantage where it is the purpose (and it should be always) to make balance sheets or approximations thereof at more frequent intervals. Unless these depreciation charges are made monthly, or for the same period as the balance sheets, an element of inaccuracy necessarily enters.

The method recommended by many good accountants is this: After the determination by competent authority of the ratios of decrease or depreciation, divide this ratio by the number of periods at which it is purposed to make approximations of the balance sheet. Apply this new ratio to the

balance of the account, or to the items, in case of a different ratio for different items, and in the book of entry used for making adjusting entries, credit " reserve for depreciation " of plant, or other asset account, and charge the amount to some expense account. The debit entry can be made to general expense, if the system be sufficiently old-fashioned to carry such an account; otherwise it becomes desirable to open a depreciation expense account expressly to provide for these entries, or, where the expenses are classified closely in order to get percentages of classified contingent addition to prime cost, a separate expense account should be carried to correspond to each form of reserve. The credit side of this entry gradually creates an account which appears among the liabilities, although the amount is not owing to any one. It stands there merely as an offset to so much of the cost of the particular asset to which it applies. It is a reservation from values available for dividends or surplus, of an amount decided upon for the purpose.

Reserves may be divided into three main

classes. Those necessitated by statute, contract, or experience as a margin of safety; those established to provide for a known future demand; and those, like the one just described, to reduce account valuations. Banks, trust companies, and insurance companies are much concerned with the first class. Very large corporations frequently go into the matter of reserves as a margin of safety. There is a great opportunity for the abuse of this machinery for diminishing the apparent results shown by the balance sheet, where conflicting interests and purposes exist, as where a powerful minority is agitating for dividends. It is to this agency that large corporations will look for "protection" from the exactions of a tax on net income. A smaller tax on gross income might be more effective. In any case, the government will need to know the operation of this subtle influence and how to meet it. It is by the skilful manipulation of this account that "good will" and other accounts created to offset the promoters' stock, in the case of over-capitalisation, are gradually offset from the profits of a busi-

ness. Whether or not this operates unfairly to the interest of investors depends upon the form of organisation, and other conditions. An instance of extreme unfairness would be the case of a preferred non-cumulative limited dividend stock redeemable at the option of the company, with voting power in the common stock only. Dividends on the preferred are passed for a period during which the balance sheet shows no profits, owing to the setting up of a reserve against good will—in reality, in the pockets of the promoters. Then the investors' money is returned to them and the promoters become the owners. This process is fair only where an equitable distribution has been made between promoters and investors, of common stock, or where the investors are themselves the promoters, and do not dispose of their preferred stock to the public.

Reserves established to provide for a known future demand are imperative if we are to have frequent showings of the condition of the business. Taxes, interest, water rates—anything constantly accruing

but payable at the end of a period—come within this class.

Reserves for depreciation of values are the most difficult, particularly on accounts covering a variety of items, because of the difference of normal expectation of life usefulness, and parity with modern devices. To this difficulty a very great element of complexity and uncertainty is frequently added by the possibility of unexpected developments in the art, as we have already seen. A thing is worth only its relative productiveness. Souvenirs have no place in accurate accounting. Where it is desirable to follow this question closely, the items of the account should be listed, described, dated, etc., in the left margin of a book provided with many columns; let each column represent a year or other period; fix the percentage—a graduated one, if desired—of depreciation of each item or group of items; apply the ratio and enter the result in the year-column; total the column, and divide the total by the number of periods at which, during the column period, it is purposed to approximate a balance

sheet. The result will be the amount of the entry between reserve and expense above described.

The discussion of the machinery of reserves need not be prolonged, particularly in view of the explanation of its purpose which was necessarily involved in the discussion of account characteristics. Further mention of what becomes of these amounts in the treatment of expenses will occur in the discussion of the expense and revenue ledger, and of department costs.

It may be well to carry the matter of reserves for future known demands a little farther, and also to show how reserves which have exceeded proper limits may be returned either suddenly or gradually to surplus account.

In relation to the former, it is only necessary to call attention to the fact that, in a very real sense, they are more truly liabilities than other reserves. They are created to show the accruing amounts owing but not yet due the municipality for taxes, the water company for water used, and the banks and note and bond holders for inter-

est. The accounts, instead of being called reserves, might as well be called by the names of these respective interests. They would then appear exactly like any other account on which we record the going out of portions of our good name or credit, for the payment of expenses incident to running the business. When we pay any other account owing on our books, we credit cash and charge that account; just so with these reserve accounts. When we pay our taxes we credit cash and charge the amount to the appropriate reserve liability account. If we find that we have over-estimated any such liability, and have established too large a reserve against it, two courses are open, either to make an entry of the whole amount, debiting the reserve and crediting something (expense, if the period be not closed, otherwise loss and gain of previous period); or letting the over-charge stand, reduce the periodical entry by enough to bring the result to agree with fact at the termination of the next period. The former course is the more scientifically correct, because it brings the balance sheet

showing of the period into harmony with the truth. The latter course may sometimes be found expedient. This method may be used in connection with any reserve which it may seem advisable to reduce. Great care must be exercised on this point in the audit, because of the ease with which the net revenue of a period can thus be inflated. A method of watching this will be outlined in the chapter on the relations of the accounting system to the duties of the board of directors.

Entries of an exactly similar nature to those which create reserves are made for the purpose of reducing supply inventory accounts by the amounts consumed for the period. For example, the price of coal being low, we purchase six months' supply, store it, and either pay money or our good name for it. Obviously, the credit side of the entry is cash or an account payable. The purchase is for expense account, but not for the expense of a single month. If we are creating monthly approximated balance sheets, we do not want this whole item to appear as having been consumed in one

month. We therefore make an inventory account of it, and then, at the end of each month we credit this inventory account and charge expense account. Frequently there are several items which should be treated in this manner, as gold and silver in plating, powder in mining, and elaborate outlay for stationery and accounting system supplies in banking, etc. It is not urged here, that any item should be so handled. The reasons pro and con are usually peculiar to the institution in question.

In conclusion, the whole subject of reserves should be thoroughly understood by every interest, or by none. It is an organism too easy of impregnation to be exclusively under the influence of any one individual or interest.

CHAPTER VIII

INVENTORY LEDGER: EXPENSE AND REVENUE LEDGER

THE transition from the consideration of personal to impersonal ledger accounts is made easy, by the study of the subjects touched upon in the last two chapters, namely, intrinsic peculiarities of the various classes of accounts, and the machinery by which their values are maintained at the discretion of the proper authority. Enough has been said, for the present, about those accounts which represent something owned or owed, i.e., asset and liability accounts, generally, aside from the fact that we have not mentioned the use of a separate ledger for inventories.

This device is employed, frequently, where the entries to inventories are large in number, and where the consumption of goods, materials, or other valuable things can be concurrently recorded in terms of

cost. The process consists merely in opening a separate ledger for the purpose, with necessary columns in the books of original entry and a governing account, or classified governing accounts in the asset and liability ledger. The first entry in each account is the inventory at the time of opening the book. Then follow charges from original entries for purchases and credits for consumption. These credits come from one of three sources, as has already been stated, the contemporaneous records of a strict warehousing system, the material costs of goods sold as shown by a complete cost system, or from ratios derived by inspection of the average percentage of gross profit on goods sold and of the ratio between the two elements of prime cost, labour and material. These ratios can be corrected by inventory, and can be made surprisingly accurate with the lapse of a little time. This system is particularly adaptable to an old factory, where changes are necessarily slow and expensive, and frequently unpopular. The purpose of these attempts to carry current ledger accounts with inventories is twofold;

it helps to check extravagance, carelessness, and loss from other causes, in buying, handling, and carrying materials and supplies and at the same time it helps to perfect a cost system and create a check thereon. In other words, an ideal cost system would not only give the prime cost of each article, but it would also show the total value of all of these articles in their two elements, labour and material, which should parallel the record of the inventory ledger accounts, taking into account the margin between lost or ruined goods and scrap values. It is a fact not to be gainsaid or overlooked that such records, as part of a well-organised accounting system, are worth many times what they cost to create and maintain. Indeed, the expense of maintaining several hundred inventory accounts is not greatly in excess of maintaining five or ten, and the results obtainable are inestimably more valuable, entirely aside from the fact that this is one of the perfections of scientific operation certain to lead to many improvements in other quarters. It is one of those systems which do the work scientifically and in ad-

vance rather than loosely, and in arrearages, like the ordinary inventory and cost systems; and it has the great advantage of making frequent balance sheets possible. This contemporaneousness of accounting results is highly desirable. If we are losing money, or making too little, let us know it at the end of one month rather than at the end of fourteen, when we shall be well into the second year on the same basis. (We allow the two extra months for the compilation and calculation of the old-fashioned inventory.) An enthusiastic advocate of modern methods used the argument that if the workmen in the factory were engaged in polishing coins, even were they but pennies, a careful account would be carried with each workman. Why not, therefore, record materials, some of which are just as valuable?

From the inventory ledger we come by an easy stage to another ledger which deals with the question of costs also, both of the business as a whole and by departments; at the same time greatly facilitating the proper handling of detail costs. This is the ledger

whose twofold purpose is to classify and analyse the expenses of conducting the business, and to divide them among the departments or stages of operation. For convenience in grouping and handling, accounts may also be opened in this ledger for the various forms of revenue. This ledger may reasonably be called an expense and revenue ledger.*

We have seen that the books of original entry may be so arranged that those entries or parts of entries which belong to any particular ledger, whether it be a record of detail accounts or the real and final ledger, may be grouped in columns which exclude everything else, and that this arrangement of columns is highly elastic. In other

*Much confusion arises in understanding accounting through the use of stereotyped and often meaningless names. Books, accounts, and statements should be called by names that are descriptive of their functions. Ledger is the only word in the whole nomenclature of accounting that has come to have a fixed and invariable significance, and it would be well, with the development of the science, if that name could be confined to the governing or final ledger from which the epitomised balance sheet must be drawn. The intermediate ledgers could be called payable account record, receivable account record, inventory account record, expense and revenue account record, etc.

words, one debit column and one credit column in each book of original entry would be adequate, if we were willing to recapitulate sufficiently to secure the totals from which to create the governing accounts, and also if we were willing to lose the advantage of certain special account columns by whose operation a single posting suffices for the month to the most active accounts, such as cash discount, both on purchases and sales. This arrangement of books of original entry is to be determined purely as a matter of convenience. There are no scientific laws governing it, beyond the cardinal principle.

With this idea of the sources in mind, we are ready to proceed to the accounts in the expense and revenue ledger.

The revenue accounts consist of three classes: Direct revenue, or that obtained directly from the main operation of the business; administration revenue, those which come from the exercise of good abilities in the organisation, as especial rebates on purchases, cash discounts obtained by clever financing, etc. There are

revenues from these sources in the most stupidly run business, and it is impossible to differentiate; therefore all such revenues may be called administrative, with the view of encouraging the management to further activity; then, there are incidental revenues, most of which do not strictly belong to the operations of the period, as the receipt of money from an account long ago wiped out as valueless, the sale of some article or stock supposed to be unsalable, and whose value has been removed from profits of a previous year by exclusion from the inventory of that period, the margin over normal price received for land or other possession rendered unexpectedly valuable to some one else by circumstances over which the management has no control. Indeed, a list of possible incidental revenues could be indefinitely extended, and there is no field in which they do not occur. They are least frequent in a carefully run enterprise which has been properly accounted upon during its whole existence, and whose subject of trade is a staple of common use. In mining such profits are so much to be looked

for that promoters commonly capitalise their expectations in addition to known values.

It is fully as important to analyse revenues as expense because the policy for the future must be framed without undue consideration of what we have termed incidental revenue. Even direct revenue may be abnormally inflated by evanescent conditions, as in the case of a railroad, by the transportation of the product of some temporary activity or in manufacture, by getting into some line ahead of all competitors, and thus being enabled to hold prices at a high level for a time; in financial business there are periods of abnormal activity; and in mining, the grade of the ore may chance to run high for a certain period in all the workings. Hence, even direct revenues require careful analysis in the light of all obtainable information, if we are not to be misled.

It is advisable to credit all incidental revenues directly to the account in the final or governing ledger which we have called loss and gain of previous period. If

this course be deemed too strenuous, let an account be opened on the first page of the expense and revenue ledger, and let these items be credited to it, with clear reference to documents which shall fully describe the transaction. A careful analysis of this account should be one of the duties of the auditing committee of the board of directors, particularly if there be contracts calling for a division of profits with managers, employees, or others.

The next page should be given to administration revenue, because, in grouping the expense accounts, it is the most natural course to place the administrative group first. This brings the two together in the monthly chart of accounts, which renders easy their comparison, both by totals and by ratios of progress. It is well to itemise administrative revenue entries briefly in the ledger for purposes of analysis. They may be carried in a group of accounts, rather than in a single one, at least during a period of close analysis and watching of the business.

The main source of revenue goes either

with the selling expense group or with the operating expense group, and is capable usually of division into as many accounts as there may be subdivisions of the group with which they occur. In the food business, for example, and merchandising and manufacture, where the selling functions of the business are all-important, the revenue is more closely connected with those functions; while in other forms of manufacture, in railroading, mining, etc., the selling group becomes comparatively unimportant, and it is the operating group that has most to do with the volume of these revenues, as well as with the economies affecting the net revenue.

The simplest form of this account exists where the thing sold is an idea, or other unmaterial thing whose prime cost involves no outlay for material, as the sale of expert services of lawyers, doctors, mining engineers, accountants, and other professional men. It is also very simple where the cost of material can be segregated in posting the sales from the original entry record, so that that item can be credited directly to inven-

tories, and the margin of sales price over material cost carried to this account. In these cases the amount of this account represents what is usually termed gross income plus operating and selling expense.

Where this segregation of sales volume into the two elements of material cost and margin cannot be readily effected, it becomes necessary to treat the whole volume of sales as a revenue. It is at this point that the difficulty arises in making frequent balance sheets. The only exact method of arriving at the cost of material included in this item is to inventory the material left on hand, and subtract that from the inventory at the beginning of the period, plus purchases during the period. This becomes easy if we have in operation an inventory ledger, as described in this chapter, backed up and made possible by a thorough warehousing system. The absence of cost records and inventory accounts should not discourage an attempt to approximate the result.

Frequently a careful analysis will disclose an average margin of gross profit in the sales, i.e., a percentage by which selling

price exceeds prime cost. The application of this ratio to volume of sales gives us a quantity made up of two elements, direct labour and material consumed. Further analysis will frequently disclose the ratio between these two. (In this work the services of men accustomed to the calculation of estimated costs in the business in question are often available.) This double operation produces an estimated valuation of the material cost of goods sold. Where the former of the two ratios cannot be reached, the application of the latter to the direct labour recorded by departments or otherwise for the period, will give an estimated valuation of the material cost of goods manufactured, the use of which is always conservative so long as the sales do not deplete the stock of raw materials or manufactured goods on hand at the beginning of the period. In the case of such depletion it is not difficult to arrive at a margin of safety.

Having approximated the volume of material cost in the total sales figure, we can easily offset that much of this revenue account by opening among the operating

expenses an account called material consumed. We debit this account with the whole amount of the estimate, crediting inventory accounts. This operation reduces inventory plus purchases, by the amount of estimated consumption, and produces an account balance which approximates the present inventory. Its correctness can only be determined by taking an actual physical inventory. The old-fashioned, arduous annual inventory automatically provides a check upon the accuracy of this calculation, but there is no better means of bringing a force to the realisation of the possibilities and advantages of a warehousing system than by calling for a new inventory every month or two, after this system is put into operation. It can be explained that the work need not be quite so conscientiously done, and that some extra clerks at small salaries can be provided. The result will invariably be an attempt on the part of the more intelligent among the employees responsible for the stock to create and maintain a record of what goes out and comes in for their own protection. It will be soon

apparent that this record spreads the inventory process throughout the year, keeps the stock in better physical and working condition and stops losses from various causes. Each department will soon be found calling for a locked wareroom with a regular system for recording the issue and receipt of material. The complete annual inventory can safely be dispensed with if a competent inventory auditor be employed, whose duty it shall be to go from one department wareroom to another, checking the contents of the receptacles with the wareroom record and the corresponding account in the inventory ledger.

With the perfection of this system comes the frequent actual balance sheet. Its frequency is only measured by the periods of summarising the books of original entry and of calculating reserve and depreciation entries. But even without the warehousing system we can continue, year by year, correcting our ratios in the light of experience, until eventually they become so close a check upon the physical inventory as to drive the stockman to the use of records

and other precautions for his own defence, and the end of that also is a proper and complete record. The accountant who thoroughly understands his weapons needs only patience to bring the most obstinate forces into conformity with constantly improving methods.

This brings us to the consideration of the items which must be subtracted from the whole volume of revenue in the course of the process of reducing it to terms of net profit. They are expenses, and in their treatment we shall reverse the order in which we have discussed revenues. The last account, or group in the ledger, is direct labour. The expenditure represented by this account is segregated from other labour items in the distribution of the pay-roll, made up from the original records of workmen's time. It covers the total amount paid for productive labour, that is labour in the actual making of the thing to be sold, as distinguished from all other work. This sum is particularly the concern of the detail cost system. An ideal cost system is one which shows for each period the dis-

tribution of every cent of this item over the goods actually produced during the period, including the distribution of all lost labour over those articles which actually arrived at salable condition. The proper field of analysis of this item is the comparison of wages and productiveness of the workmen, one with another, and with their own past records as well as with the records of men in similar lines. Vast simplification, and increased productiveness, usually result from paying piece prices. In many lines, however, great care must be exercised to avoid losing in quality more than is gained in quantity.

The next group of expense accounts, working backward through the expense and revenue ledger, might be described as the general operating expenses. They cover all expense aside from direct labour, selling and administrative expense—power, tool making, repairing, factory supplies, and many others. They may be divided into an indefinite number of accounts, if it seems desirable to analyse them in great detail. There is not much to be said about them,

from the auditing standpoint, without saying more than there is space for. Each one should be watched closely and its meaning studied. These items come from the purchase record, the pay-roll distribution and the adjusting entries, where items of depreciation are charged, in the process of establishing reserves. Items come also from the petty cashbook and from the record of cash paid out, and may, under certain circumstances, come from other sources.

The next group is selling expense, which covers salaries and travelling expenses, advertising, catalogues, etc., and the first group is the administrative expense, which covers officers' salaries, interest, etc. Both of these groupings are largely discretionary. One of the main considerations regarding them will be more clear when we come to discuss their distribution over departments by means of formulæ.

The expense and revenue ledger, if it include a system for recording the consumption of material, affords the same key to the situation that the balance sheet or

governing ledger does, but in terms of revenue and expense rather than in ratio of assets to liabilities. It is a paying plan to have it operated by a man of considerable practical experience in the business, because of the opportunities for economies which it suggests to such a man.

With very little additional work the ledger can be made the means of getting department costs, and percentages for addition to prime cost by departments, thus solving one of the most vexing of all accounting problems, namely the determination, in a complicated business, of the relative results of the various output departments. It can be made to show whether it pays to make or carry certain lines. The ensuing chapter will be devoted to an explanation of how this is done.

CHAPTER IX

DEPARTMENT COSTS AND CONTINGENT ADDITION

ONE method of arriving at a distribution of expenses by departments is to apportion them at the end of the period, usually by an exceedingly rough estimate, or according to volume of sales. Obviously neither method is scientific, and the latter is especially open to objection because that department which shows the smallest volume of sales may possibly require the greatest amount of attention in some particular, or may have the heaviest investment in plant, as in the case of a line of goods which has been stifled by competition.

Another method is to open for each department a few expense accounts into which everything goes; and the benefit of close analysis of expenses is entirely lost.

Altogether the best method is to add to

each page of the expense and revenue ledger a column for each department, i.e., output department, or for each stage of manufacture, where the line produced, or sold, is homogenous. This plan is applicable to any line of business, from brokerage to farming. The original entries are made exactly as for the expense and revenue ledger, as explained in the last chapter, but with the addition, in the "particulars" column of a letter, member, or hieroglyphic to indicate which department or which departments are concerned with the charge. This mark can be made on the bill, check record, or petty cash voucher, by the man who indicates the account, and at the same time; and there are conditions under which he might make his posting at the same time to the proper expense account, relying upon the governing account to act as a check upon its accuracy. Another simplification might, in some instances, be achieved by cards made at this stage and dropped into receptacles arranged by account and department, to be totalled later. This plan is not recommended for general use.

Several objections may be urged by accountants who have never seen this system in operation. It is indeed an innovation to add to a ledger page columns for further distribution of posted items. It is a little like resurrecting the dead and buried. The further development of the science of accounting will come mainly through the establishment of psychic communication with these hitherto lost ones. It is not improbable that the asset and liability ledger, itself, may give forth tones, under the influence of proper mediums. In other words, the creation of new forms for keeping in active communication with balance sheet accounts is conceivable, and it will be coupled with the operations of valuations and reserves.

This expense and revenue ledger page, from left to right, is arranged as follows: explanation and item, date, source, department mark, debit column, credit column, as many columns as there are stages, departments, mills, shafts, or other divisions in the strict classification determined upon. The mingling of two or more classifications

must be avoided. If output departments are decided upon, operating departments must not be included. These latter are to be distributed over the former. Otherwise logical proceedure is impossible, and the results become chaotic. It is never desirable to compare unlike elements at this stage.

The number of items which will be distributable by their intrinsic character, increases with each group, until we reach the last, which is direct labour, all of which distributes itself in making the pay-roll distribution. Naturally material consumed, if we are fortunate enough to have it, also distributes itself.

Administrative expense is difficult to distribute, but the president's salary, taken as an item by itself, is not so difficult to distribute as would be the whole lump sum of all general expenses. The same reasoning applies to each separate item, and even were the difficulty greater, the object warrants the effort. Each locomotive built and sold, each block of bonds sold, each shaft and ore body developed, each mile or

section of railroad built or operated, each quart of milk produced, costs some portion of the president's salary; the percentage of his salary which it costs may not be the same as the percentage of oil and waste, or of printing of prospectuses, or of mule hire, or of haulage, or of fertiliser. Very seldom is the president's salary, or any other general item, fairly distributable according to sales. His time may be largely taken up for a long period in the development of a new department. Formulæ can be devised for the distribution of single items. Often it will be found that the whole group of administrative expenses can be distributed by one formula which takes into account volume of investment, space, output, and certain especial considerations. The sales group embraces some self-distributable items, as department catalogues and advertising, especial salesmen, or especial trips. The others are distributable according to various considerations, most of which readily suggest themselves, as relative amount of time spent by a salesman on various lines.

Factory general expenses are more largely self-distributable, and the others generally suggest their own formulæ, as power, sweeping and cleaning, etc., etc. In this group, where output departments are segregated, operation sub-departments, doing work for two or more main departments, must be distributed, often, in total, according to the volume done of each main department's work. Sometimes only a rough distribution can be effected, but it is better than none, and is not likely to correspond to the distribution of the president's salary, hence better even to guess at it separately. One may entirely leave out certain departments for which it does no work; the other works for all, or should, at least.

It is well to provide a page at the end of each group for totalling the columns. Those groups whose accounts are distributable by a single formula may be totalled and brought forward to this page before the application of the formula. It will be found that the time required for this distribution once a month is surprisingly short, and the work can be done by a

clever stenographer, the formula being established. In a large business the formulæ should be scrutinised by the auditing committee of the board of directors, in order to make sure that injustice be done no department.

The expenses being thus redistributed according to groups and departments, the next step is to open an account in the governing ledger for each department, calling it "results of department A, B, or C."

Open the expense and revenue ledger at the page on which appears the distributed total of administrative expense. From this page post the total administrative expense to the credit side of the governing account of this ledger, in the governing ledger, and the several department amounts to the proper results accounts. Continue similarly with the other groups. The revenues, having been also distributed, may be posted to governing and results accounts.

This operation will wipe out the governing account and establish in its stead a results account for each department, whose balance will be the profit or loss on that

department for the period, whose first three charges will be the source of the contingent addition for that department, if carefully analysed for a sufficient period, and whose fourth and fifth charges will be the items whose volume should be accounted for by the detail cost department for the period, if that department is to justify its work by proving its accuracy. The account will appear as follows:

RESULTS OF DEPARTMENT A.

Administrative expense	Administration revenue
Selling expense	Main revenue
Factory general expense	
Direct labor	
Material consumed	
Balance Profit or	Balance Loss

If main revenue be reduced to margin in sales over material cost, the last debit item will not appear, and the cost system will look to the inventory ledger for figures against which to check its reckoning of material.

It is at this point that the connection is closest between general accounting, and detail costs, and it is seldom advisable to

undertake the establishment of a current cost recording system without first carrying the general accounts to this point. It is never wise for any one incapable of carrying the general accounts to this point to endeavour to create a current cost recording system, because of almost inevitable erroneous inclusion and exclusion; because of the impossibility of consistently developing items on the border line between direct and indirect labour, and because of the fact that prime costs, even if correctly calculated, have a limited value without the contingent addition.

The importance of correct department contingent addition to prime cost, or better yet, the knowledge of what volume of goods must be sold at market price to cover the general cost of operating the department, can be clearly seen if we take into account the fact that it is constantly necessary to make prices without guidance other than a knowledge of what we can afford to accept.

There is one feature which has been omitted for fear of getting into too great technicality. It is the distinction between

items of general expense according to their degree of variation with volume of output. Generally it is safe to proceed to the stage above outlined without much regard for this, and when this stage is reached it will be found that the results accounts will be sufficiently illuminating to facilitate the calculation of reductions of price which may be safely made to insure larger volume or meet competition.

CHAPTER X

FUNDAMENTAL PRINCIPLES OF COST ACCOUNTING

THERE are three entirely distinct but interdependent cost systems in operation in every thoroughly well-organised business. The expense ledger described in Chapter VIII constitutes the machinery of the first of these three systems. This system comes first in point of order chronologically, because it is the inevitable result of double-entry accounting to carry ledger accounts for the expense; furthermore, it must come first and be properly organised if the others are to be created on sound principles; in relative importance it stands first, because the others may be approximated or even dispensed with for a long time; but regardless of competition and all other price-lowering factors, a business whose expense accounts are not watched is almost sure to suffer eventually.

The rearrangement of the expense ledger explained in Chapter IX provides the machinery for the second cost system. This system follows naturally the proper organisation of the first and can be instituted in any business at any time by merely printing ledger sheets with the department columns and giving instructions to mark original entries with department signs. In relative importance this system, even in a business whose output is homogeneous, is next to the main-cost system, because it shows where the losses are and tells which lines to push, and because it lays the foundation for the derivation of right selling prices from the figures of the detail-cost system, that is, it furnishes a fair percentage of contingent addition thereto, and shows clearly the volume of business necessary to provide for the total of that additional or general operating expense.

The last system to come into existence as a currently recording system is the detail-cost system, because it cannot be created on sound principles without the other two. Cost systems are devised and put in opera-

tion without regard to the other two systems, but their results if good are purely fortuitously so; frequently they are bad; generally the system breaks down altogether. This absence of close connection with the general accounting is the cause of the failure because, in a business where the general accounting does not segregate those items which constitute the rightful material of the detail-cost system, arranging everything else for proper use in its place, the field is so indefinite that the cost department does not know what to include and what to omit in making its calculations; and there is no mathematical proof that all omitted items are included in the calculation of the percentage to be added to prime cost.

The cost system must make use of all material that belongs to it, including every cent of lost labour and material. It usually happens that in the process of manufacture a few articles or parts are ruined, or the material, after some work has been expended upon it, is discovered to be defective. The value of the whole material has been included in the credit entry on

inventory account, and the debit entry to material expended or consumed account. If this neglected item be large, as actually happens at times, the balance sheet will show a result very different from that promised by the margin between our defective cost figures and selling price.

The same may be said of lost labour. The nature of the product determines whether these losses shall be included in prime cost, added to a general expense account for inclusion in the contingent, or charged directly to losses for the current period. The stage through which the business is passing has also an important bearing. To take an extreme case for illustration, suppose the product to be flying-machines of some type. This is a large and costly unit of production, still in a more or less experimental stage. A machine is carried to the point of making the first actual flight in the process of testing before finishing. An accident, due to a remediable cause, results in complete demolition. The cost of the lot of ten machines has been carefully recorded contemporaneously with

their construction. We know the exact loss: what shall we do with it? We do not expect one of every ten machines to meet a similar fate, and furthermore the competition is becoming every day keener on our particular type of machine. Therefore we must keep our selling prices free from abnormal elements of cost. There is but one thing to do. The amount must come out of the anticipated profits, and we may as well be conservative and take it out of the present period. On the other hand, the accident may be a blessing in disguise, for it may result in some discovery which makes our system of flight vastly more reliable than formerly. In this case, particularly if the loss be too heavy to be born by a single period without serious setback to our enterprise, it would not be unreasonable to charge the amount to some account which would indicate the good resulting, call it experiment account, perhaps, and carry it among the assets until it should have been wiped out by monthly depreciation charges so divided as to spread it over the determined period of time. This,

like many other things in accounting, is subject to abuse. The other extreme is a loss of several out of several thousand parts, worth only a fraction of a cent in all, and normally likely to recur constantly. These losses, small in themselves, aggregate large sums, under certain conditions, and unless the whole item of direct labour and the whole of material issued be charged to the number of parts returned, the total charged to costs will not agree with the amount set aside as belonging to them, and therefore left out of contingent.

To secure the nearest possible approach to this mathematical accuracy in cost accounting, the records must be made not weeks or months after the expenditure to be accounted for, but at the time. In general this is true of all calculations which must or should be compared in their results. In particular it is true here because there are and will always be many occasions for conference between the cost department and the operating departments as to the meaning and correctness of records. It is unreasonable to expect workmen or even fore-

men to be letter perfect in making out time tickets, etc. It is more likely that they will be, in lines where it is possible to put all work through on coupon tickets, because here the clerical work is all done for them, and their only part in it consists in removing and retaining until payday the priced coupon which represents their various operations and the agreed compensation therefor. Even where the coupon system is not feasible, but where all work goes through from the issue of material to the completion of the salable article, the records can be made by "job numbers" and the character of each workman's operation is of comparatively small consequence. Where necessities of economical administration require the manufacture and stocking of many parts the problem becomes much more complicated, and the importance of close connection, both in point of time and of co-operation, between the pay-roll distribution and the recording of prime cost items according to product, becomes very great.

The pay-roll distribution consists of segregating all items of labour paid for

according to the classification demanded by the arrangement of the expense accounts, and further, according to departments in case departmental accounting is followed. The machinery consists of a large sheet with a margin and groups of two or three columns—preferably three. Each group is headed by the designation of a department. In the margin are entered the names of all accounts to which labour is chargeable, leaving such number of lines for entries as inspection and experience indicate to be necessary. The three columns of each department or group are headed direct labour, undetermined or unclassified labour, and general or overhead or indirect labour. The original records from which the pay-roll—or all pay-rolls of a period—have been made up must then be entered on this sheet. The horizontal totals are made from the sub-totals of the second and third columns. These are the amounts chargeable to the various accounts and together make up the total contingent addition of labour items. Column number one is totalled vertically regardless of account

names—in fact these account names have nothing to do with entries in this column; and this total is the amount of direct labour chargable to the department whose designation heads the group of columns. The addition of the horizontal and vertical totals should equal the pay-rolls distributed. The

Account Names	Department designation					Repeat	Account Totals	
	Direct	Undetermined		Indirect				
	This column has nothing to do with accounts. Its total footing is the direct labor for the department.	This column totalled for each account.		This column totalled for each account.				
X. acct.s		00	00	00	00		00	00

object of the undetermined columns is to prevent the burying of items about which there may be doubt in the mind of the pay-roll department. This brings these items into the open to be studied and gradually forced into one of the other columns. Ideally there should be no entries in this column. Those which do occur must

go with the indirect labour until they can be so organised that their treatment by the cost department becomes possible. In other words, they must be made chargeable to certain definite jobs.

Past pay-roll or pay-rolls have been charged, when checks were drawn, to pay-roll account, in the asset and liability ledger, and unpaid pay-rolls will also be so charged. From the pay-roll distribution sheet just described, the grand total is credited, through the adjusting entry-book, to pay-roll account, and the horizontal totals are charged to the proper general expense accounts by departments, while the vertical footings of the direct labour columns go to the direct labour account in the expense ledger, by departments. Another item not here mentioned, but which often occurs, is labour on the creation of an asset, as a new machine, a building, etc. Such items are naturally to be segregated and charged to the proper balance sheet ledger account.

Each ticket or item whose showing has been put into the direct labour column

was put there because it could and should be utilised by the cost department. Each such item is marked or stamped to indicate its treatment and is passed on to the cost department for use in making its records. These items have been assembled twice already, once according to men, when the workman's account was calculated; a second time according to a threefold distinction, i.e., kind of labour, account, and department; now it remains to redistribute part of them—the direct labour items—according to the orders put through the factory.

It has already been stated that the most difficult problem in this connection arises where necessities of economical operation require the making and stocking of quantities of parts to be later assembled into the finished product. We shall describe a system which accomplishes this, and whose method, somewhat simplified, will at once be seen to cover the simpler problem. Let it be understood that this system cannot be introduced to-day in an old factory, and finished results gotten to-morrow. On the

other hand it must be recognised that it is based on more scientific principles, and will some day produce better results than the system which involves the accumulation of data from sundry sources, ignoring lost labour, and beginning its inquiry long after the event.

A record, similar to a ledger account, is opened for each article or part, as orders for them may show on the men's time-tickets. The job or shop order numbers on these tickets make reference to a full description easy. No work is put through without such order. From the order, particulars as to quantity, etc., should be entered in a column provided for the purpose at one side of the sheet. The balance of the sheet is given to columns for the recording of the various operations on this ordered article as such operations may appear on the men's records of their work. It is sometimes difficult to get men to make the desired record. Show them that the factory which best knows its costs will keep most of its men at work during a panic.

From the time-ticket, in the column

headed by the operation name which the time-ticket bears (or the cost clerk knows to be the operation of the man in question), enter quantity rate—time or piece—and amount. Eventually data will be accumulated which will show variations in rates paid for the same operation, the difference between totals ordered during a given period and totals completed, with information as to just how many operations were performed on lost parts.

The total of parts actually stocked by the warehouseman should be checked against this record. When all parts requisite to assembling some finished article shall have been so accounted on, a similar sheet may be used for assembling operations, and the complete labour cost record made up from all, or the warehouseman may carry the parts at a price which will include the labour recorded on the part sheets, and in issuing parts for assembling charge them to the order in question at that price. In that event the inventory accounts would show material and labour value of parts in stock, and only assembling opera-

tions would be charged in the final summing up of the cost of the finished article. This method is preferable where a thorough warehousing system has gone into operation, and the saving in figuring inventory of parts in stock is sometimes enough to pay the expense of operating a thorough system.

The warehousing system consists of crediting warehouse inventory and charging to shop or customer, as the case may be, all material or goods issued. The return of these goods from shop enhanced in value requires a corresponding credit to shop, and charge to warehouse inventory. This margin, less the loss of material, is the direct labour. Usually it is not possible at this point to value and record this enhancement of value unless the labour cost system has reached a high state of perfection (which requires from one month to three years). In that case the returned parts would be entered at the value of the material issued, less the value of scrap returned. This record becomes comparatively simple after a period of operation, in many lines, while in others it is exceedingly difficult, or even

impossible, because of the way the material cuts, and the unexpected divergence of quality. In such cases it becomes necessary to place an arbitrary valuation upon each part, getting as near to cost of the whole, and relative cost of each as our best experience permits.

Various approximations of exact mathematical principles are necessary in working toward ideals. Accounting is, in many respects, a science of tendencies. It is always struggling to keep pace with the changes going on, particularly where it has not had a proper start in the beginning of the business. Mathematical exactitude in cost work, particularly, is difficult of attainment, even when the proper system is put into operation with the turning on of the power for the first time.

Unless we have these fundamental principles in mind, however, the tendency of our systems will be away from, rather than toward, the desired perfection.

CHAPTER XI

DEVISING OF SYSTEMS

KNOWLEDGE of fundamental principles of accounting science, and some familiarity with its practice, are indispensable in the work of creating thorough system. Sound analysis of conditions, clear perception of what is most essential to be known about the business, i.e., the form which the final results should take, and mathematical logic in reasoning, are equally important. Given these indispensable quantities the best system is that which is devised from the standpoint of intimate and comprehensive knowledge of the history, organisation, operation, personnel, competition, strong and weak points, and object of the particular institution for whose use the system is intended.

System consists of finding the best way to do a thing, and arranging to have it

done always in that way. That system is most likely to succeed which will cause trouble if disregarded. The argument is often advanced against a certain plan, that its non-observance in some quarter will lead to its failure. This is really a forcible recommendation. No correct geometrical demonstration was ever developed from a figure one of whose essential lines had been carelessly omitted, and no mathematician introduces into a figure negligible lines as a precaution.

Therefore it is desirable, and frequently essential, that a system should be put forth with the sanction of the highest authority. The general manager should be the system man. He may call in outside help—experienced accountants, in order to get the benefit of their technical knowledge; he should invariably hold conferences between heads of departments on the various features of a far-reaching matter like an accounting system; and he strengthens the sanction of his own authority by laying the structure of a proposed plan clearly before the auditing committee of the board of directors. On

this basis system becomes business management, and management becomes systematic. The invariable result is advancement in the scope of the business, coupled with economy in its operation.

All correct system radiates from and is governed, directly or indirectly, by a proper general accounting system, and should follow it in point of time. This, as we have already seen, is especially true of cost accounting.

The steps, in their logical order, toward the establishment of a sound accounting system, are given as explicitly as possible in so general a discussion. It must be clearly understood that many of the most desirable results can be obtained only by the lapse of time during which the process of development must be persistently and intelligently fostered. A few weeks' or months' services of an outside expert who then drops out entirely will not in most cases result in anything but failure and discouragement. Some one permanently connected with the business must be the system man. Management through system is the

only scientific method, and produces the best results, except in the case of the occasional genius.

In the beginning, study the transactions and processes of the business with a view to two considerations: first, the form in which they can most readily be assembled and compared in balance sheet and comparative charts, which shall be helpful to the management in improving the hold of the business upon its field; and, second, the best and easiest manner of recording these matters in books of original entry so arranged that a ledger system will naturally follow, from which such balance sheet and comparative charts will be easily created.

If the field of operation is the purchase and resale in a limited market of a narrow line, at fixed buying and selling prices, the problem is simple, and very simple records will suffice. The main consideration limits itself to the largest possible volume of gross sales, with a minimum of general expense. No cost system, beyond a close analysis of general expenses, is necessary,

and clerical work should be reduced to approximately 0.

Any deviation from the hypothetical conditions above outlined will introduce complications, whose treatment, in order of their bearing upon results, becomes the vital purpose of the system. To illustrate this, take the terms of the simple formula, elaborate each in turn, and the effect will be seen.

Purchasing at fixed prices calls for no record beyond that of volume and is an operation safely left to the office boy. This function may become the vital element of success or failure, however, and its importance varies with the complexities of source, quality, price, price fluctuations, volume and seasonableness of supply, and variety of lines. In a business whose chief operation is the assembling of parts and material made and sold by many concerns, this function and the necessary records call for first consideration.

An inventory ledger, operated by the purchasing department, and showing full detail of each purchase, may sometimes be used to

advantage. The books of original entry should be carefully elaborated—especially the record of purchases and of payments therefor, and the balance sheet should be supplemented by a statement from this ledger showing quantities, average costs, and present valuations. In addition comparative charts should be maintained on price, and on quantity carried and used. The expense of these refinements is infinitesimal compared with the risk of loose buying.

Selling against close competitive prices also complicates matters. Costs at once become imperative, particularly detail costs, and careful subdivision of contingent addition into classes according to variation with volume of output. In no other way can we be sure of keeping pace with competitors, or going out of business before losses become inevitable rather than after they occur. Complexities of line and process enhance the difficulties, and render careful records vitally important. A concern having a varied line and knowing its costs may live on certain lines while fight-

ing unfair competition aggressively on others. Without detail and department costs, however, this is a dangerous undertaking.

If the market be unlimited the problem becomes one of organisation and resources. Expansion beyond the limits of one or other of these elements has been a frequent cause of disaster. From the accounting standpoint the frequent illuminating balance sheet and an accurate and provable cost system are the first essentials, because these are, or should be, the levers by means of which fresh capital and bank loans are to be secured. Sellings costs—the whole group of selling expenses—should be carefully and frequently analysed. Subsidiary systems for collections and price comparisons are also important—the one to prevent allowing needed capital to lie idle, the other to limit sales according to territories or other divisions where the best prices can be had. The disproportionate investment of capital in various goods or materials must also be watched. Every cent of capital must be kept at work, even at the expense

of slight differences in price on large and small quantity purchases.

The conditions must be carefully studied. The next consideration is the character of the transactions. If there be a large number of small transactions, the work of each must be as simple and easy as possible, consistently with careful handling, and everything else must be organised in such a way as not to interfere with the machinery of selling. If the transactions are individually large, then careful analysis of each is imperative, and the records can, and usually should, be elaborated on each transaction, in order to make sure of proper handling. In such a business, losses, when they occur, are likely to be of considerable consequence. Every business man is familiar with all these facts. They have been dwelt upon here in order to emphasise the importance of considering them in the work of devising an accounting system. A well-rounded system is not likely to result from work begun before analysis along these lines.

Let us suppose that we are to create an

accounting system on a fairly complicated business, where the buying, the competition in selling, the possibilities of expansion, and the necessity of manufacturing parts rather than completed articles, all add complexity to the problem. In addition, we have several departments, classifying by character of product, each line of goods mainly manufactured in its own operating department, but getting some work and materials from other departments and from sub-operating departments, such as plating, polishing, foundry, tool shop, etc.

We learn that resources and credit of the concern insure a continuance of operations on a cash basis, therefore the purchase record can be made as already described, but with the addition on the right side of a column for entering the amounts of checks drawn and another column or two for deductions, as cash discount. On the left an additional column must be introduced for the total of check plus deduction. There is no particular reason in this case for carrying individual ledger accounts with our creditors, and there are never very

many unpaid bills. If we desire to know the details of an account they can be made up from files of paid bills. Entries from time to time directly into the governing ledger from the right-hand column showing total credited to purchase account when the bills were entered, and from the left-hand column showing the total of check plus deductions, will create an account showing the total of unpaid bills at any time.

An ordinary check register or cash paid book, with or without the checkbook, will provide for other payments.

The sales record is the next consideration. We find that the orders are of enough consequence to warrant copying and filing in a loose leaf form. By making them in duplicate, filing one chronologically as an index and the other in two binders, one for unfilled orders and the second for filled orders, as filled, together with copy of invoice, we have an excellent means of full information, and the last of the three may be used to post the receivable ledger.

All we need is a sheet for recapitulations. This can be ruled with a column

on the right for each revenue department, and for sundry credits, or a separate column for each ledger, i.e., inventory, expense, and governing. The left is provided with these sundry columns also in addition to the columns necessary to provide for the divisions of the sales ledgers.

A cash received book on similar principles, that is, providing for receipts from the various divisions of the sales ledger, and with sundry columns for the other ledgers, together with an ordinary petty cash book, will meet the requirements, so far as books of original entry are concerned. Their form is a matter of convenience, not of paramount necessity, and any competent accountant can devise forms that will meet the requirements. On the other hand, two establishments, even in the same line, can seldom use each other's forms. A journal for adjusting entries will be required.

Our ledger system will consist of accounts receivable, inventory, expense, and revenue; all controlled by the asset and liability governing ledger as already described. There is nothing difficult or mys-

terious about any of these books. The subsidiary ledgers get their information from the separate entries, the governing ledger from the footings and recapitulations of columns, except those entries which affect asset and liability accounts, which come directly from the governing or asset and liability ledger columns in the books of original entry.

An excellent device is a book with a right and a left column for each ledger system, and a space for particulars in the middle of the page. Put the asset and liability ledger columns next this space and the others in order desired. When the month's work is completed in any book of original entry, copy the column footings or recapitulations into this "summary journal," putting the asset and liability entries in in detail. The reserve entries are made directly in this book. The result is a summary of the month's business on one page, which must balance before posting to the asset and liability ledger. Reserve entries are posted directly to expense accounts from this book. If the opening balance sheet

be copied on the first page of this book, the transactions, in gross, of the business can be traced for many years without reference to other sources, even though all other records should be destroyed.

The facts and conditions will readily suggest forms for the ledger, in the light of what has already been said. The pay-roll distribution should be begun at once and all material should be locked up and issued and recorded as wanted. This much must be done at once, and may be done without the use of a single specially ruled form until such time as forms can be gotten. There is no excuse for allowing careless or ignorant methods to continue.

A good beginning has been made when this much is done, and it will be well to turn the attention to the perfection of these features before attempting to go farther. Formulæ for the distribution of expense groups and accounts must be found, however, before the results accounts can be started, but it is not a very serious matter if this be not done for some months. The great thing is to alternate stages of

creating and perfecting what has been started.

Shop order systems, time tickets, collections, handling of unfilled orders, an inventory system, administration of machinery, sales data, and many other things have a bearing upon the accounting system and are influenced in their turn by it. The perfection of the one is impossible without due attention to the others, and a cost system as a basis of price is a very dangerous thing until a period of experience shall have made possible a certain degree of confidence in its accuracy.

The general accounting system is the beginning of all systems, but there is no ending to any of them.

CHAPTER XII

STATEMENT OF RESULTS

THE form of balance sheet most frequently used shows the figures at which the assets and liabilities appear on the books at the end of the fiscal year, and a balancing item, on one side or the other, called loss and gain or some similar title, as,

Cash	$11,000	Accounts Payable..	$20,000
Acounts Receivable.	45,000	Bonds	80,000
Notes Receivable...	7,000	Notes Payable	18,000
Plant	100,000	Capital Stock	150,000
Machinery	51,000	Loss and Gain.....	36,000
Merchandise	90,000		
	$304,000		$304,000

This statement shows nothing beyond the valuations at which assets and liabilities are carried on the ledger, and the amount by which the ratio between them has changed since the books were opened. The period may have been one year or twenty, and

therefore nothing appears indicative of the year's results without reference to the "loss and gain" account in the ledger. The information given may be all that the management desires to give, but it is not all that those interested should have or can get. Bank loans are frequently made on a report of this character. From the credit standpoint, only one of the two vitally essential elements appears, and that is not as fully expressed as might be. In other words, valuations are given without evidence that they represent values. Progress or retrogression at the moment is not even suggested. The loss and gain item may have been much larger before the operations of the year to which this statement refers. The concern may have lost money for several years. Valuations and values become rapidly divergent in such cases.

The balance sheet can be made in such form that no knowledge of accounting usages is necessary to enable any one interested to derive the following information from it, in addition to all that the

other one shows without reference to any other source.

1. Prime value of each asset.

2. Volume and rate of reserve against each asset.

3. Comparison of quick assets and liabilities.

4. Surplus or deficit at beginning of year.

5. Dividend voted, whether paid or not.

6. Gains or losses maturing during current year but belonging to previous period.

7. Actual results of current year.

8. Change in condition of each asset and liability account, which changes, taken together, make up the results of the year's operations.

A statement of department results accounts for the year will explain the sources of the total result as shown in this balance sheet, and a list of the accounts from the expense and revenue ledger will give the expenses in detail for the whole business. This statement will also show the same bal-

ance as the balance sheet shows for the year's result. No further description of this statement seems necessary. It is self-explanatory, but requires careful study. One point only may be a little confusing to the beginner. Why are the two items, dividend paid, and previous period's expenses, included in the column headed improvement, and nowhere else? They are included in that column because they have come out of the values of the assets during the year, and yet they do not belong to the year, therefore in computing the changes of those assets as affected by the year's operations strictly, we must add them in with what the books show those assets to be. Otherwise the favourable changes in assets would appear less than they actually were by the amounts deducted therefrom to pay dividends, and old expenses. These items, ought not to appear as expenses of the year, but ought to be taken out after the margin between revenue and expense has been calculated. The proper percentage of items of last year should, of course, be deducted from the profit percentage or

* Classification	Account	Assets: Beginning of Year	Assets: End of Year	Liabilities: Beginning of Year	Liabilities: End of Year	Changes: Improvement	Changes: Impairment
Quick:	Cash	$10,000	$11,000	....	....	$1,000	....
	Accounts Receivable (good)	40,000	45,000	....	....	5,000	....
	Notes Receivable	5,000	9,000	....	....	4,000	....
	Total Quick Assets	$55,000	$65,000	....	....	$10,000	....
	Accounts Payable	....	....	$25,000	$20,000	5,000	....
	Notes Payable	....	....	20,000	18,000	2,000	....
	Total Quick Liabilities	....	....	$45,000	$38,000	$7,000	....
Slow:	Suspense Receivables	1,000	1,000	....	....	....	....
	Plant	120,000	120,000	....	....	....	....
	Reserve against Plant	....	....	20,000	22,000	....	$2,000
	Machinery	57,500	63,500	....	....	6,000	....
	Reserve against Machinery	....	....	7,500	10,000	....	2,500
	Merchandise	84,000	90,000	....	....	6,000	....
	Bonds	....	....	80,000	80,000	....	....
	Total Assets—Liabilities	$317,500	$339 500	$152,500	$150,000	....	....
Equity:	Capital Stock	....	....	150,000	150,000	....	....
Unpaid Dividend	Dividend voted but not paid	....	....	3,000	3,000	....	....
Surplus	Surplus at beginning of year	....	....	12,000	....	....	....
Deductions from Surplus	Dividends Paid during year	....	....	....	....	6,000	....
	Expense items of previous period	....	....	....	....	1,000	....
Addition to Surplus	Results of this year	....	....	....	31,500	36,000	4,500
	Surplus at end of year	....	....	....	36,500	....	....
				$317,500	$339,500		

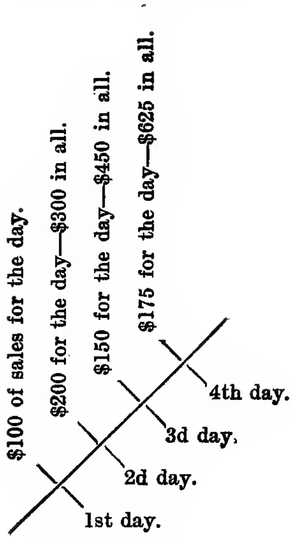
* This classification alters with conditions.

commission of a manager who was paid a commission on last year's profits.

There is no better method for watching the year's operations month by month than an extension of this same principle. Rule a large sheet with thirteen sets of two money columns. Head the sets with the months of the fiscal year, in order, leaving the first set for the new balance sheet. In the first column of the first month enter assets in black and liabilities in red opposite the balance sheet account corresponding. In the second column enter the changes that have occurred, improvements in black and impairments in red. The difference between black and red in this column will be the gain or loss for the month, providing, of course, the inventory be carried in a current account, or be approximated as already explained. Results accounts, or detail expenses and revenues, can be added in the proper columns below the balance sheet accounts. Their balance will check the above, and their detail will explain it. This statement will be found the best of all methods of watching the

operations of a business as shown by figures.

There is another and much more graphic manner, however, of showing results. It consists of line charts. Comparisons can be made and watched better in this way than in any other. Suppose it be the desire to compare department sales month by month and day by day, each department with its own record for other months, and each with the others. Take a large sheet of paper, ruled in small squares, allow the horizontal dimension of the square for the lapse of a day, and the perpendicular dimension of the square for the sale of a certain amount of goods, as one hundred dollars. The sale of one hundred dollars' worth of goods in one day would be indicated by a diagonal line from the lower left-hand corner of one square to the upper right-hand corner of the same square. The next day must carry the line horizontally across the next square, if it be a working day, and the volume of the sale would determine the height to which the line would rise.



Several departments can be shown on one chart, giving the second a starting place several squares to the right of the first, etc. Use different colours of ink or pencil, or a different kind of line for each month and at the end of the year there will be twelve lines starting at the same point, for each department and running across as many days horizontally as there are working days in each, and each line will rise as high as the

total sales for the month will carry it. By, having several departments on one sheet, they can readily be compared with each other.

Almost anything from prices to weather can be compared on these charts. A good line to add to the chart above described is a line for each department for the day or month representing cost of goods sold plus department expense. Comparing sales with this line we have the profit. Comparisons are made vertically, of course, on the line representing the end of the corresponding day. A little practice will render this charting system almost invaluable, and particularly so as the accounting system gets on a basis where its showings are reliable.

Many good comparisons, as of expenses in gross and in detail, can be had over a long period of time by allowing the horizontal dimension of a square for a month, thus letting the whole line mean a year's figures. Comparing these year by year, and comparing volume of business in the same way, gives a better idea of tendencies, and a much more graphic picture than can

be gotten by ranging figures in rows. Furthermore it makes possible the comparison of several different matters with each other.

The manager can make the books and statements therefrom tell him almost anything he may want to know about the business. These charts require little time, and the work can be done by an assistant.

The remaining two chapters will be devoted to suggestions covering some of the features and matters of accounting and system which will be found to be helpful to managers and to directors in the performance of their duties.

It is impossible to resist the impulse to say, in closing this chapter, that if every business institution in this country had a thorough accounting system, and if the banks, constituting the various more or less formal clearing house associations, had on file, from all such institutions, balance sheets, year by year like the one recommended in this chapter, a long stride would have been taken toward a foundation on which to build a currency system. We business men demand a currency system

from government or the banks, without realising that it is largely our own fault, in the conduct of our own affairs, that we do not get it. It can never come without further progress in this direction, and until a genuine showing, not only of values, but of progress, is made in the statements to banks, we can not blame them if they prefer to make their loans on stock exchange collateral—particularly as such loans act as a safety valve for them, on our inelastic currency.

CHAPTER XIII

ACCOUNTS AND THE MANAGER

THE accounting system and methods become particularly interesting to the active manager, if his contract provides for a percentage of the profits. In this case there should be a provision regarding the basis on which inventories are to be made, and particularly if the enterprise be an old one. It is obviously desirable, from the standpoint of business stability, to have the inventories low in order to keep the working capital in the business. Every move toward conservatism is, however, a means of reducing the manager's percentage. There should be no conflict.

Having settled these points, and taken charge, the first essential is to get a grasp of existing conditions. How do the lines of responsibility and effectiveness lie as between the men in important position. In

an old business names of positions are apt to signify little. The strength and weakness of the individuals is what counts. An instance of this is a factory where, until recently, the shipping clerk, a man who had grown grey in that office, was the most forcible man in the organisation. The orders of superintendent, foreman, and even of the manager, meant nothing to the workmen when they saw a look of determination on the face of this individual. Obviously three courses were open to the new manager, (a) reorganise the individual to suit his proper prerogatives. This failed; (b) discharge him. This was distasteful because of the man's long services and small chance of other employment; (c) make him superintendent. This was tried, but he was so little used to authority rightfully exercised that this failed also.

Every feature of the work and every individual must be under some one's authority, and the lines must run directly from one end to the other of the organisation. After getting a grasp of this task, for it is frequently a long operation, the

next step is a survey of the sales, including the attitude of the trade. For this purpose there is nothing so effective as a trip through a territory where the business is less than it should be. This, of course, applies only to distributing and manufacturing. There are analogous measures in enterprises of another character. The relation of product and demand should be carefully studied during this period, both as to character and quantity.

Then comes the work outlined in Chapter XI, and in this work it is usually desirable to have the assistance, in an advisory capacity, of an outside accountant. His function should be not to devise and introduce an entire system in a few weeks' time, but to assist the manager, himself, in this work, for in no other way can continuity and permanency be assured. Furthermore, a good accountant, with wide experience, can be infinitely helpful, during this work, in the solution of many problems which arise in other lines.

At the same time an appraisal of plant and machinery by a competent authority is

always worth more than it costs, and provides a basis for the creation of reserves on a proper scale. This work should be followed by an expert study of the machinery and processes in use, compared with the best machinery to be had, and the most modern methods. What competitors are doing frequently throws much light upon these questions. Intelligent salesmen can be very helpful here, and an aggressive man from some more active plant in the same or allied lines should be found and placed in some such position as assistant superintendent or tool department foreman.

Frequently it happens that a business is standing still or retrograding, and the manager thinks that he has neither time or money for such work. It is then that these measures become imperative, and there are few enterprises that can not be improved by their adoption. Let the manager neglect routine if necessary—some one will attend to it, and let him find the money somewhere. The sale of old stock from the inventory, or a loan from the owners, will sometimes provide it. In two years' time

the improvement will add an equivalent sum, and often much more to the yearly net income.

There is no system which will operate as it should without constant watching, and in an improving business, system improvement is necessary. The best method of assuring observance of instructions and of avoiding the overlooking of necessary developments, is the use of a calendar vertical file, arranged with divisions for the months and days of the year. Send out all orders and explanations in writing, and file copies under dates when the matter needs further attention, either to make sure of observance or for more development. Many other things can go into the same file, and in this way the manager is enabled to review systematically the work of all departments, and keep them all marching at an even pace.

Some things of periodical recurrence should also be recorded in this file, as preliminary steps in the management of inventory. This file becomes excellent insurance to the business of continuance under

changed management, of many things which might otherwise fail of observance. An excellent illustration is an inventory system in use in the Simmons Hardware Company of St. Louis. There are several buying departments—ten or twelve. The goods are stored according to bulk and other considerations, which result in dividing each buying department's line among several warehouses and order-filling departments.

The problem was to take the inventory in such a manner that each buying department might have its line in a book, arranged for its own convenience, priced beforehand, and so arranged that warehouse totals for insurance purposes would be accessible. Preparations must be completed well in advance. The buyers must list the goods and indicate prices in books, each page ruled with a column for each warehouse. Count tickets must then be made from these books, bearing description, page in buyers' books, designation of buying department, and of warehouse where goods were kept (a colour scheme was used for this). These cards or count tickets

must then be distributed to the proper warehousemen, and by them given out to squads in charge of sections. The count was then made, verified, and corrected as shipments in or out occurred during the days immediately preceding the inventory. On the day appointed the count cards were removed, rearranged according to buyers' books, and quantities entered opposite the descriptions which had been previously entered, and from which the count tickets were made. The plan was successful; and the following year the calendar file furnished timely instructions and suggestions to the successor of the man who put it into operation.

Machinery administration is another matter which can be carefully watched in a similar manner. Any thing which should be done or investigated at a certain time of the month or year can be assured. An excellent collection system can be operated in harmony with this device. Let the statement clerk send to the manager an original and carbon copy of all delinquent accounts, the original to be mailed with a

first letter, the copy to be held in a special file with copy of letter. Place a memorandum in the calendar file under date on which settlement should arrive. Have reports daily from ledger clerk of all settlements or delinquent accounts, from which reports notations can be made on statement and memorandum in calendar file. Automatically these matters will come up for attention on the proper day. If no day be set, the file of statements can be returned to the ledger clerk on the first of the month, who, after sending out all other statements, can make a new original, and note any changes on the old copy. A second letter can then be sent, and by continuing in this manner, no accounts can be overlooked.

In this manner, also, it is possible to follow closely the operation of time-ticket records for use of the cost department, shop-order systems, department transfers of material and labour on the inventory ledger and the departmentised expense ledger, and many other matters, some of which are sure to be overlooked if memory

and a convenient time be depended upon entirely. Salesmen's route sheets, with timely information as to lists of customers, their average volume of purchases, the seasonableness of goods, usual expense of the trip, and incidental matters of interest, if filed in this way, will be found very helpful.

In addition to the suggestions already made the creation of certain charts, as explained in the last chapter, will be found very profitable.

It is an excellent plan for the manager, or his immediate assistant, to operate the balance sheet and governing ledger, and, if possible, the expense and revenue ledger. This brings the balance sheet and its showing into the active life of the business in a way that nothing else can do, and it results in the operation of every feature in a more scientific manner. It also prevents the establishment of a little monarchy in the accounting department—a most dangerous place, indeed, for one to exist.

A constructive thinker, in control of the accounts, can sometimes save an otherwise hopeless cause. An obstructive thinker,

with that leverage, can block the wheels of progress; and the wrecker must control the accounts in order to effect his purpose without discovery.

It may be objected that a busy manager has not the time to carry out these suggestions. The answer is that the manager who has under his own eye all the systems contained in these suggestions, can safely leave the other work to the various departments, and if he be an able executive he will soon learn just which parts of this work to delegate to his trained corps of assistants.

CHAPTER XIV

ACCOUNTS AND THE DIRECTORS

IT is generally conceded that our business life, more than that of any other civilised nation, is subject to alternating periods of exhilaration and depression. This condition results, aside from domestic uncertainty, in making us at one time the cause of considerable amusement to our neighbours—that is, when we are enjoying over-expanded prosperity; and at the other time, during our undue depressions, we become the source of annoyance and disturbance to their more stable financial systems, by creating extraneous pressure upon their safety-valve—the discount rate. We owe it to them, as well as to ourselves, to remove the cause of this.

It is true that the rash abandonment of sound banking principles was the primal source of trouble, but the results of that

act are conditions which the restoration of a discount system, however well planned, would not alleviate. These conditions would not have arisen under a proper system, but once created they must be dealt with firmly and on right lines in order to make possible a restoration of a proper banking and currency system.

In other words, the thing needed is sound commercial paper for rediscount as a basis for a currency whose elasticity shall be adequate to and subject to our business requirements. It is a common complaint against our banks that loans are made only on stock exchange security, regardless of commercial needs. This is often true, but the banks cannot be held entirely responsible for the evil. In fact, it may often be the salvation of our structure, for we must have reservoirs from which to draw suddenly in cases of dire necessity. We must have some measure of elasticity, and under present conditions commercial paper in the hands of banks constitutes their slowest asset.

The cause of this is twofold. There is no

machinery for rediscounting commercial paper, and the commercial paper is not based on a sufficiently universal plan of presentation and responsibility. The first of these two main causes will be removed by contemporaneous development of the clearing house organisation, and of public intelligence and sentiment for proper legislation in aid of district clearing house organisations under central supervision. It is to be hoped that this legislation will proceed step by step, defining rather than creating, thus allowing natural and logical development. The details can safely be left to work themselves out. We are the same people in our business organisation as in our political organisation, but, for many reasons, often wiser in the former.

The second cause of our financial unrest will be removed only when our commercial paper is presented to banks for discount with the sanction behind it of a uniform manner of valuation and accounting, and of our more fixed and unavoidable responsibility of boards of directors. We

have discussed the principles of accounting in considerable detail.

Of the lack of responsibility of boards of directors every business man of wide experience has personally observed glaring instances. The public press has reported many cases where, under investigation by courts or investigating committees, directors have been excused, on the plea of ignorance of the event, from responsibility that would have rested heavily upon an individual or a partnership conducting the same business.

It seems to be generally conceded that laws and law courts should not compel men to do what is impossible; and it is assumed that what a director does not know he cannot know. Therefore the director is not regarded as a trustee of the property and conduct of the corporation. He receives little or no compensation, which fact also contributes to his relief from responsibility, and he is not selected for the position because of his known ability to analyse the transactions of the management. In varying degrees this is different in other coun-

tries, and it will change with us before our financial system reaches its best development.

The change will come through the recognition of the fact that with a proper accounting system, properly audited by competent board members, there is little, if anything, which the director can not and should not know about the transactions of the week or month, or even longer period elapsing between meetings. When commercial paper shall be based upon an illuminating balance sheet, which report bears the stamp of a responsible board of directors, our banks will not be behind those of other countries in recognising its superiority as a basis for an elastic currency. Their district or clearing house organisations will begin, little by little, to act upon this basis, and government will be confronted, not with a dark problem demanding solution, but with a condition demanding definition and support.

Some measures which will help to enable a board of directors to meet this responsibility, and at the same time further the

interests of their enterprise, are here suggested:

1. If it be found that no expert in accounts has been included in the board, then let one be employed to act as chairman of an auditing committee whose other members should be directors. It is desirable, however, that he be a member of the board for the sake of greater freedom in showing the bearing of the records upon matters of business policy.

2. With expert help, and by careful examination, determine values and create a balance sheet.

3. In the light of information upon which valuations were based, determine basis of revaluation, i.e., depreciations, etc.

4. If an accurate running inventory of merchandise or material be even temporarily unavailable, determine an arbitrary ratio, as already explained, for estimating consumption. (This, together with reserves, carried month by month, not only makes approximated monthly balance sheets possible, but causes a uniformity of expense charge which cannot be greatly varied with-

out causing comment. It also leads to comment and explanation in case the inventories, when taken, vary too much from the estimate.)

5. Make a list of production departments, and a list of detail expense accounts to be carried.

6. Make sure of the capacity of the person responsible for the accounts, to arrange original entries in such form that the ledger system will be properly maintained and to avoid errors in charging as between asset and expense accounts. He should also understand carrying inventory accounts for supply or other expense outlays which should be spread over a period longer than that between the most frequent approximated balance sheets.

7. See the balance sheet entered in the asset and liability ledger, and in the first set of columns on the thirteen-column balance sheet chart. Place the former in the hands of the manager, and the latter under lock and key, where it will be accessible only to the auditing committee. (This in case a very strict watch be deemed ad-

visable, as for the protection of the manager from any possible charge of inaccuracy from outside sources, or from a minority interest.) Use a similar sheet for recording operation account balances and monthly changes. A wonderfully accurate knowledge of what is going on can be had by calling for the balances from the ledgers and entering them on these sheets at the meetings. Every unusual item will then have to be explained, and if large, can then and there be investigated from the original documents. In some cases a sworn statement by the manager regarding such a matter would be helpful.

8. The matter of costs, and how to record them, should be discussed, and a plan devised. Contingent addition, margin of profit, market price, selling policy, and selling organisation naturally come up for discussion in this connection, and should be carefully considered in the light of what plans the management may have made. A definite plan which is wrong is better than none.

9. Line charts on sales, expenses, product

both by count and valuation, and on such other matters as are vital should be called for, because of their value in graphically showing facts and still more because of their indication of tendencies. The promotor of a new business might well be asked to chart his estimates for later comparison.

10. Give the auditing committee instructions: (a) To make occasional inspections of the entries in books of original entry, and their transcription into the summary journal. (b) To check all or part of the statements mailed by creditors with their ledger accounts, or with the records on the voucher purchase journal. (c) To send out sales ledger statements occasionally with a request for confirmation of their accuracy to be mailed directly to the auditor. (d) To inspect purchase bills and ascertain the correctness of the accounts to which they are charged. (e) To inspect the pay-roll distribution as to the correctness of charges to accounts representing permanent investment, prime cost of product, and general expense and to make sure that there are no "dummies" in the pay-roll, and that each

man actually receives the amount set opposite his name in the pay-roll book.

Other things will be suggested from time to time. The physical inspection of inventories is a task which varies inversely in ease and importance, but a difficult inventory to inspect minutely is usually a difficult one to mishandle grossly if the precautions above outlined be adopted intelligently.

Let it be clearly understood that these measures are suggested primarily in the desire to place the responsibility for the conduct of the business upon the highest authority. The board of directors, under the present system, hold the power of final action in most matters; but they do not and can not, in many instances, take upon their shoulders the corresponding responsibility. Any board may, and all boards should, assume it, and the law will recognise this fact some day. When that day comes, perhaps this little book will be found a very present help in time of trouble in quarters where trustworthy advice may not be readily available.